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ABSTRACT

This annotated bibliography, which has been entered into the SOLAR Bibliography File, focuses on the phonetics and phonology of tone, including studies on the physiology of phonation and pitch control, pitch perception, inherent pitch of vowels, the interaction of tone with musical melody in tone languages, and other related issues. An attempt has been made to cover all the major contributions to such subjects as the phonological representation of tone, the nature of downdrift, the interaction of pitch and consonant types, and to include many phonological descriptions of tone or "pitch accent" systems. The main entries, totaling 550, are listed in alphabetical sequence by author. In addition to the bibliographic citation, a list of keywords is provided for each entry. Abstracts are given for virtually all entries. An index is provided from an alphabetical listing of all the keywords, the language names and families, and the geographical areas of languages referred to in the entries. (KM)

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AN ANNOTATED BIBLIOGRAPHY ON TONE

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An Annotated Bibliography on Tone

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Edited by Ian Maddieson

Working Papers in Phonetics 28, November 1974, University of California, Los Angeles.

Maintained as part of the SOLAR Bibliography File at System Development Corporation, Santa Monica, California.

PREFACE

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Introduction

This bibliography is a by-product of the UCLA Tone Project, a National Science Foundation under Grant GS 37235. It had its origin in the reading on tone and related issues by the members of the tone group for the purposes of their research.

The various bibliographic printouts were produced in cooperation with Dr. Tim Diller, head of the SOLAR(Semantically-Oriented Lexical Archive) Project at System Development Corporation, Santa Monica, California. Each citation was written up on specially designed entry sheets. These worksheets were keypunched at System Development Corporation and entered into the Data Management System utilized by SOLAR(one of the SOLAR files, with the addition of the tone bibliography, now contains more than 4500 citations on documents in linguistics). This system accepts entries with the usual bibliographical information as well as abstracts and keywords. Following on-line editing the present volume was composed on the System Development Corporation IBM 370-145 computer. The design of the entry sheets, the computerized bibliography file, and the composed format we owe to Dr. Diller, who also gave generously of his time in producing the computerized data file and the composed printout.

Since no large annotated bibliography on tone has been published before, it was felt that distribution of this work as a volume in the UCLA Working Papers in Phonetics series would be useful.

Coverage

The focus of the present work is on the phonetics and phonology of tone including studies on the physiology of phonation and pitch control, pitch perception, inherent pitch of vowels, the interaction of tone with musical melody in tone languages, and other related issues. A bibliography of this size obviously is not exhaustive, but it is, as far as we know, the largest annotated bibliography on tone available today. We have tried to cover all the major contributions to such important debates as those dealing with the phonological representation of tone, the nature of downdrift, the interaction of pitch and consonant types, and to include many phonological descriptions of tone or 'pitch accent' systems. Clearly, a large number of entries, especially phonological descriptions of tone languages, could have been added if we had had more time, energy, and space. What has been included reflects to some extent the individual interests of the compilers. Furthermore, the omission of any item does not mean that the compilers feel that the item is insignificant or uninteresting. In fact some of the most familiar and significant literature on tone may well have been overlooked simply because it was well-known and had not been re-read recently. Some suggestions on where to look in order to remedy some of the deficiencies of the present volume will be found below under

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"Further Sources" .

Format

The main entries are listed in alphabetical sequence by author (surname or equivalent) and identified by a sequence number printed to the right. These numbers run from 9001 up. An index is provided from an alphabetical listing of all the keywords. In the index each keyword is followed by the sequence numbers of all the entries which have the keyword in question. This keyword index forms a combined index of subjects, languages and language families, and geographical distribution of languages. A reader interested in finding out which entries discuss the phonological features of tone can look up "tone features" in the keyword index and then locate the entries with the sequence numbers; one interested in tone languages of the Athapaskan family can find "Athapaskan" in the keyword index; similarly, one interested in finding the entries dealing with the tone languages of West Africa can look up "West Africa" in the keyword index. The way in which the keywords in these various areas have been dealt with will be discussed in the next three sections.

SUBJECTS: Keyword Index

Subject keywords in the index are designed to identify topics in the study of tone covered in the bibliographic entries. We have tried to put together a useful grouping of entries for the various topics. For example, the keyword "level tones" identifies all those entries which discuss the maximum number of level tones believed to exist and those which describe a language as having an unusual number of level tones. All articles on the historical development of tone systems are identified by the keyword "tonal development". It may be necessary to browse through the list of keywords until you find the keyword that might identify the topic you are interested in. Issues in phonological theory (global rules, cyclic rules, absolute neutralization etc.), surrogate languages (drum language, whistle speech) and many other topics are listed. Many entries, however, proved rather difficult to characterise in terms of the subjects that they covered. For example, entries have been given the keyword "tone correspondences" if they discuss cross-language correspondences of tone without drawing historical conclusions, even though it is unlikely that anyone will ever be interested in looking up all the articles which deal with tone correspondences for their own sake. In order to compile a perfect index one would need to read the minds of those who will use this bibliography - but we hope the scheme used here is helpful and better than no subject index at all.

LANGUAGE NAMES and LANGUAGE FAMILIES: Keyword Index

Each language that is the focus of phonological description, phonetic investigation, internal reconstruction or whatever, or is used for exemplifying some theoretical point in an entry is listed in the index. An attempt has been made to be accurate and consistent in assigning

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names to languages. This is a difficult task since there are many confusions or nomenclature and misidentifications. That is, many cases where what should be distinguished has not been kept apart and what should be united has been separated. Where competing names for the same language exist, the local name (self-designation anglicized) has been preferred in most cases except where there is no tradition of using this name in linguistic literature or where an established English designation exists. Dialect names have been avoided where possible. The user should therefore try possible alternative names for a given language or dialect if the one they are looking for does not appear in the index. Some examples of how this works: all the Twi dialects (Asante, Akwapim, etc) and related dialects such as Fante or Brong are indexed under "Akan", the name that is used in Ghana today. The Togo remnant language called Siwu by its speakers is listed under Avatime since that is the language name that has been used in most publications on the language. Swedish has been called Swedish not Svensk because that is established English usage. The name Thai, referring to the national language of Thailand, has been avoided because of its potential confusion with the name Tai, the term reserved for the family of languages to which Thai belongs. In this bibliography the national language of Thailand has been indexed as "Siamese", the language family as "Tai". Chinese presented a particular problem, as it usually does. The practice adopted here has been to use the names of the various local varieties of Chinese and denote the national language by Mandarin. Thus there are no entries in the index under "Chinese"; the index does however contain "Taiwanese, Chaozhou, Cantonese" etc. All of the entries relating to the Chinese family can be found by looking under "Sinitic".

The index also includes the genetic classification proposed for each language. These genetic labels usually indicate intermediate levels of classification. For example, Indo-European does not occur among the keywords but several of the subfamilies do (Germanic, Baltic, Slavic, Indo-Iranian). Among African languages the major class, Niger-Congo, is not listed; instead, each Niger-Congo language is classified (Greenberg The Languages of Africa 1963) into Mande, West Atlantic, Voltaic (Gur), Kwa, Benue-Congo, and Adamawa-Eastern. Some of the better studied groups are further identified by a lower-level classification, such as Volta-Comoe, Edo, Togo-Remnant, etc. within Kwa. In Benue-Congo, according to Greenberg's classification, there are four divisions: Plateau, Cross River, Jukunoid and Bantoid. We have accepted this classification except that we use a separate keyword for those Bantoid languages that have been classified as Bantu by such scholars as Guthrie. Because these languages are numerous and prominent it was felt a separate keyword would be appropriate. The term Bantu as applied by Greenberg, Williamson and others, refers to a group that includes more languages than Guthries's Bantu. So in order to make it clear that the narrow definition is intended, the keyword "Narrow Bantu" is used. Only Bantoid languages outside Narrow Bantu are identified by the keyword "Bantoid".

In the case of the languages of Asia and America an attempt has been made to find appropriately sized units for classification. No single authority has been followed but a 'consensus' position has been sought - this may have led to inconsistency. The principal Asian families recognized are Sinitic, Tibeto-Burman, Tai, Miao-Yao, Viet, and Kam-Sui. In America units such as Arawakan, Uto-Aztecan, Otomanguean and

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Athapaskan seem well-defined, but there also seem to be numerous cases of rather indeterminate affiliation. The same is also true in the Oceanic area. In these cases we hope that the labels assigned will still help those interested in the languages of these areas to find what they are looking for.

GEOGRAPHICAL AREAS: Keyword Index

The approximate location of languages referred to in the entries is also indicated in the keyword index. The following geographical areas have been indicated:

China	North America
Southeast Asia	Central America
Far East	South America
New Guinea	North Africa
Pacific Islands	West Africa
Europe	East Africa
Indian Subcontinent	Southern Africa

The boundaries of these areas have been adjusted to take linguistic relationship into account as well as geography. For example, there is a tendency for Tai languages spoken inside the borders of China to be located in "Southeast Asia". Also, the dividing line between North and Central America, which falls somewhere in Mexico, has been bent to take account of the linguistic affiliations of the languages involved, Uto-Aztecan languages being located in "North America", Otomanguean languages in "Central America". Transplanted languages are located in their homelands, e.g. the Chinese spoken in San Francisco is regarded as belonging in China.

Abstracts

An abstract of usually 50 to 250 words follows the basic reference information for an entry. The abstracts in the present work vary in length and in the amount of care and thoughtfulness that went into their writing. They also vary in the degree to which a critical stance has been adopted. Such variation is inevitable under the circumstances in which the work was compiled. The length of an abstract should not be thought of as necessarily proportional to our estimate of the value of an entry. As time ran out some entries were included for which only a very superficial abstract was able to be written. Others were included with no abstract at all. The abstracts aim to summarize the main points of an entry. Where they fail we apologize, but we feel that most of them will be helpful. We hope that some will result in bringing unjustifiably neglected work on tone as well as facts and observations about some of the lesser-known languages to the attention of tonologists.

Further Sources

The gap caused by the slight coverage of the various varieties of Chinese in the present volume can be filled by consulting the general

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bibliography on Chinese linguistics entitled CLIBOC: Chinese Linguistic Bibliography On Computer by William S-Y. Wang and Anatole Lyovin, Cambridge University Press, 1970, 511 pp. It contains over 3000 entries provided with 'topic tags' somewhat similar to the keywords of the present work. It also includes an appended section in which 579 of the major articles are abstracted. This book is an expanded version of "Bibliography of Chinese Linguistics" which appeared in Current Trends In Linguistics Volume 2: Linguistics in East Asia and South East Asia, edited by T. Sebeok, Mouton, The Hague, 1970, pp. 388-449. There are also useful bibliographical compilations at the end of other articles in this same volume and in other volumes in the Current Trends series, especially Volume 7: Linguistics in Sub-Saharan Africa, 1971, Volume 8: Oceanic Linguistics, 1973 and Volume 10: Linguistics in North America, 1974. Each of these volumes surveys work on the languages of a particular geographical area. See also "Inventory of Descriptive Materials" by William Wright in Handbook of Middle American Indians Volume 5: Linguistics, 1967(Series edited by Robert Wauchope, Volume 5 edited by Norman A. McQuown), pp. 3-42, containing 570 entries with brief annotations and "Inventory of Classificatory Materials" by Maria Teresa Fernandez de Miranda, pp. 53-78 of the same volume, containing a smaller number of more extensively annotated entries dealing with comparative literature. Middle America is the 'Mesoamerican culture area' covering essentially those languages found from the northern border of Mexico down to the border of Costa Rica. For African languages the periodical literature from 1950 to 1972 has been abstracted in African Abstracts published by the International African Institute with the support of UNESCO. For the languages of Southeast Asia see also Bibliographies of Mon-Khmer and Tai Linguistics by H. L. Shorto, Judith Jacob, and E.H.J. Simmonds, Oxford University Press, 1963; Bibliography of Sino-Tibetan Languages by Robert Shafer, Volume 1 1957 - Volume 2 1961, Otto Harrassowitz, Wiesbaden.

In addition the reader should consult the bibliographies in "The Many Uses of Ho" by William Wang(Sequence number 9513), Consonant Types and Tone edited by Larry Hyman(Sequence number 9230) and The Tone Tones: UCLA Working Papers in Phonetics 27.

Finally, entries in the present bibliography which have an extensive bibliography generally have that fact pointed out in the abstract.

Ian Maddieson

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9001

Abbott, M. (1972) "A 'Deducai' Tone in Konkomba" Institute of Linguistics, Ghana.
NOTES: Paper presented at the 10th West African Languages Congress, Legon, Ghana, March 1972.
ABSTRACT: In the Saboba dialect of Konkomba adjacent high tones are automatically downstepped and a low after high with any tone preceeding is raised level with the high. But alternations in both nominal and verbal constructions between mid and high are not handled by these rules, and must be distinguished from non-alternating mid and high tones. The proposed solution is to posit a rising mid-high complex tone on the syllables which show the alternation. The conditions under which this complex tone is realized as high and as mid are discussed in some detail.
KEYWORDS: tone rules, downstep, domain of tone, techniques for tonal analysis, morphotonology, Konkomba, Voltaic, West Africa

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9002

Abramson, Arthur (1962) The Vowels and Tones of Standard Thai: Acoustical Measurements and Experiments. IJAL, Department of Anthropology, University of Indiana, Bloomington.
NOTES: Publication 20 of the Indiana University Research Centre in Anthropology, Folklore and Linguistics.
ABSTRACT: This Monograph reports acoustical measurements and perception experiments for the vowels and tones of standard Thai. For the latter, measurements of the fundamental frequency patterns of many sets of tonally differentiated single vowel and double vowel monosyllabic morphemes were made. Average tonal contours for the 5 phonemic tones on both single vowel and double vowel monosyllabic morphemes were then calculated. Experiments on the perception of the 5 tones yielded the following major results: 1. The tones are identifiable in isolated monosyllables 2. Highly intelligible tones can be synthesized using the average pitch contours that resulted from measurements of real speech 3. Pitch is the primary feature in signalling the tonal distinctions overriding other concomitant phonetic features associated with the tones. It was also shown that allophonic variations in vowel length correlate with tone. Average durations of citation forms of geminate vowels occurring on e ach tone were calculated for 2 subjects. Geminate vowels on the mid and low tones tend to be longer, on the high and falling tones shorter than on the rising tone.
KEYWORDS: Southeast Asia, Tai, Siamese, acoustics, tone perception, tone synthesis, instrumental study of tone

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9003

Abramson, Arthur (1972) "Tonal Experiments with Whispered Thai" Papers in Linguistics and Phonetics to the Memory of Pierre Delattre. Valdman, Albert (ed.) Mouton, the Hague. pp. 31-44
NOTES: Earlier versions of this paper were presented at the 73rd Annual

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Meeting
of the modern language association of America, December, 1958 and the 54th Meeting of the Acoustical SOciety of America, October, 1959.
ABSTRACT: Reports on tonal experiments with whispered speech in Thai. Results of perception tests indicate that in the context-free setting of isolated words, whispered Thai tones cannot be well identified, but in a
sufficiently long sentence context, some Thai speakers can do reasonably well at identifying certain tones. Whispered communication can be ambiguous in short utterances with low redundancy. In longer utterances or in short utterances embedded in a conversation or a particular situation, the high contextual redundancy plus the tonal distinctions that whispering does provide, combine to make whispered communication quite feasible.
KEYWORDS: Siamese, whispered speech, tone perception, southeast Asia, Tai

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9004
Arnow, Arlene and Evelyn Pike (1957), "Phonemes of Ocaina (Huitoto)" IJAL. 23.1, pp. 24-27
ABSTRACT: Two tone levels are posited for Ocaina. Successive low tones are progressively lower. Palatalised consonants have pronounced pitch glides to adjacent tones. Vowel sequences may have HH, LL, LH, or HL tones.
KEYWORDS: downdrift, consonant types and tone, Ocaina, Huitoto, South America

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9005
Abramson, Arthur and Donna Erickson (1972) "Electromyographic Study of the Tones of Thai" Status Reports on Speech Research, Haskins Laboratories, New Haven. 31, pp. 231-236
ABSTRACT: An electromyographic analysis of the production of tones of standard Thai indicates that activity of the cricothyroid muscle increases with the raising of Fo, and the activity of the strap muscles - the sternohyoid, sternothyroid, and thyrohyoid - increases with the lowering of Fo.
KEYWORDS: Southeast Asia, Tai, electromyography, larynx, Siamese

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9006
Anderson, Doris (1962) Conversational Ticuna. Summer Institute of Linguistics, University of Oklahoma, Norman. 402 pp.
ABSTRACT: A coursebook designed to 'teach yourself' Ticuna with the help of recorded conversations. The transcription employed throughout the analysis of the language assumes five level tones proposed by Lambert Anderson. Tone drills are included and a Ticuna-English

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vocabulary and a list of words differing only in tone.
KEYWORDS: Ticuna, Tucanoan, Andean-Equatorial, pedagogy

9007
Anderson, Lambert (1956) "Vocabulario Breve Del Idioma Ticuna" Tradicion (Cuzco). 8.21
NOTES: Abstracted by Bright, William. IJAL 27.2: 159. 1961.
ABSTRACT: Ticuna is spoken in the border of Peru, Columbia and Brazil. This study provides a brief statement of the phonemes and a Spanish-Ticuna vocabulary of over 700 words. Five tone levels are distinguished, with four two-level combinations.
KEYWORDS: level tones, Ticuna, South America, Tucanoan, Andean-Equatorial

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9008
Andrews, Henrietta (1949) "Phonemes and Morphophonemes of Temoayan Otomi" IJAL. 15.4, pp. 213-222
ABSTRACT: Description of the phonemic system, including consonants and vowels (characterized phonetically and distributionally); tones, their allotones and distributions; illustration of types of conditioned root tone changes; the independence of stress and tone; junctural phonemes and their realizations; syllable structure; permissible vowel and consonant sequences. Morphophonemic processes are described, including phoneme alternations, apocope, syncope, consonant assimilations, vowel assimilations, and the occurrence of the 'glottal morphophoneme'.
KEYWORDS: tone distribution, tone sandhi, Otomi, Otomanquean, Central America

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9009
(1961) The Tonal Structure of Ewe. Hartford Seminary Foundation, Connecticut.
NOTES: Hartford Linguistic Monographs No. 1.
ABSTRACT: Ansre proposes an analysis of the tonal system of standard Ewe which derives three surface level tones from two underlying tones resulting from the interaction of three classes of consonants with the underlying tones, and of the morphosyntactic position of the tone-bearing units (noun prefix, noun stem, etc.).
KEYWORDS: Ewe, Kwa, West Africa, consonant types and tone, morphotonology, tone rules

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9010
Armstrong, Lilias (1940) The Phonetic and Tonal Structure of Kikuyu. Oxford University Press for the International Institute of African Languages and Cultures, London. 363 pp.

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KEYWORDS: East Africa, Narrow Bantu, Benue-Congo, morphotonology, tone rules

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9011
Armstrong, Robert g. (1968) "Yala (Ikom): a Terraced-level Language with Three Tones" Journal of West African Languages. 5.1, pp. 49-58
KEYWORDS: Yala, Kwa, downdrift, tone rules, West Africa, level tones

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9012
Armstrong, Robert g. (1972) "A Note on Downstep in Yala (Ikom)" Studies in African Linguistics. 3.3, pp. 423-425
NOTES: See also "Yala (Ikom), a Terraced-Level Language with Three Tonemes". Journal of West African Languages 5.1: 49-58.
ABSTRACT: This note mainly reiterates important points made in another article by this author (see notes above) concerning downdrift and downstep and the infLuence of the mid tone on these phenomena. Further, the notion 'latent tone' is
introduced as a possible way of treating downstep and blocking of glide formation between a high and low tone as different manifestations of a single phonological process.
KEYWORDS: West Africa, Kwa, Yala, downdrift, downstep, tone rules

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9013
Arnott, David W. (1958) "The Classification of Verbs in Tiv" Bulletin of the School of Oriental and African Studies, London. 21.1, pp. 111-133
KEYWORDS: morphotonology, West Africa, Tiv, Benue-Congo, Bantoid

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9014
Arnott, David (1964) "Downstep in the Tiv Verbal System" African Language Studies. 5, pp. 34-51
ABSTRACT: After considering an analysis in terms of three tonemes Arnott suggests Tiv is better analyzed with two basic tones and downstep. Eleven tenses with examples of six verbal types are examined and the occurrence of downstep described.
KEYWORDS: Tiv, Bantoid, Benue-Congo, West Africa, downstep, morphotonology

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9015
Awobuluyi, Oladele (1970) "High-tone-junction-contracting Verbs in

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Yoruba" Journal of West African Languages. 7.1, pp. 29-38
KEYWORDS: Yoruba, Kwa, West Africa, morphotonology, syntactic structure and tone

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9016

Awobuluyi, Oladele (1971) "The Phonology of Yerwa Kanuri" Research Notes, University of Ibadan. 4.1, pp. 1-21
ABSTRACT: This paper includes a brief taxonomic description of Yerwa Kanuri phonology. Two level tone phonemes are posited: high and low. The high tone phoneme has two allotonic variants - a single 'lower-than-high' pitch and a sequence of high plus 'lower-than-high' pi tch - in the environment between a low tone and a pause. No examples are given. Tone bearing units include vowels and a syllabic nasal.
KEYWORDS: Nilo-Saharan, Kanuri, West Africa

9017

Awobuluyi, Oladele (1972) "The Morphophonemics of Owon Afa" Research Notes, University of Ibadan. 5.2-3, pp. 25-44
NOTES: Paper presented at a Round Table Meeting on Elision and Assimilation in West African Languages, University of Ibadan, May, 1971.
ABSTRACT: Owon Afa (spOken in oke-Agbe, Nigeria) has three level tones. Rules of ' tone reduction', 'vowel reduction', 'vowel assimilation' and 'vowel coalescence' are posited to deal with changes which occur to adjacent vowels separated by a word boundary.
KEYWORDS: Owon Afa, West Africa, tone rules, Kwa

9018

Bahl, Kalicharan (1957) "Tones in Punjabi" Indian Linguistics. 17, pp. 139-147
ABSTRACT: Bahl describes the Punjabi dialect known as Majhi as having even, rising
and falling tones. Even tone is mid but terminated by an abrupt rise; r ising tone is phonetically, rise-fall; falling tone phonetically fall-rise with a tendency for creaky voice to occur. Bahl concludes that "e ach phonological word has only one lexically significant and contrastive tone which can occur on any one of the syllables".
KEYWORDS: Punjabi, Indo-Iranian, Indian Subcontinent, pitch accent consonant types and tone

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9019

Bahl, Kalicharan (1957) "A Note on Tones in Western Punjabi (Lahanda)" Indian Linguistics. 18, pp. 30-34
ABSTRACT: Bahl notes that the Lahanda dialect of Awankari has four series of stops

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as well as tone contrasts. The phonetic differences of pitch can be ass igned to two tones, even and rising, which can occur with all stop series.
KEYWORDS: Punjabi, Indo-Iranian, Indian Subcontinent, consonant types and tone

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9020
Bamgbose, Ayo (1966) "The Assimilated Low Tone in Yoruba" Lingua. 16 pp. 1-13
ABSTRACT: Bamgbose points to tonal contrasts between high and rising, mid and lowered mid, and low and falling which arise in Yoruba when conditioning environments are removed by assimilation or elision. Reluctant to propose a phonological contrast between these tonal variant s, he suggests instead a 'prosody of assimilated low tone' which is pres ent in forms which lack the environment of an actual low tone (which normally selects the correct allotone). Certain compounds, numerals, deictics, etc. are shown to have the same allotones as would normally follow a low tone
but have no low tone environment.
KEYWORDS: tone rules, Yoruba, downstep, West Africa, Kwa

9021
Bascom, Burt (1959) "Tonomechanics of Northern Tepehuan" Phonetica. 4 pp. 71-88
NOTES: Abstracted by William Bright IJAL 27.3 p. 258, 1961.
ABSTRACT: The recognition of two phonemic tones in Tepehua leads to description of
extensive morphotonemic perturbations. Certain suffixes condition Chang es of tone in stems, which are divided into classes on the basis of the various changes which
occur. Tonal alternations also occur in certain syntactic combinations.
KEYWORDS: tone rules, morphotonology, Piman, Tepehua, Uto-Aztecan North America

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9022
Be ach, Douglas (1924) "The Science of Tonetics and Its Application to Bantu Languages" Bantu Studies. 2.2, pp. 75-106
ABSTRACT: This paper deals with the definition of tone, classification of tones, typology of tone languages, tone transcription, and other important issues related to the study of tone. Included also is an outline of tones of Xhosa. Of particular interest in Xhosa are Beach's observations about the interaction between consonant types and tone.
KEYWORDS: transcription, consonant types and tone, domain of tone, Xhosa, level tones, contour tones, tone sandhi, morphotonology, intonation and tone, Narrow Bantu, Benue-Congo, Southern Africa

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9023
Be arth, Thomas (1968) "Etude Instrumentals Des Tons Du Toura (Cote D'ivoire)" Cahiers Ferdinand De Saussure. 24, pp. 45-58
KEYWORDS: Toura, Mande, West Africa, instrumental study of tone, level tones

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9024
Be arth, Thomas (1971) L'enonce Toura (Cote D'ivoire). Summer Institute of Linguistics, University of Oklahoma, Norman. 481 pp.
NOTES: Doctoral thesis submitted to the University of Geneva
ABSTRACT: Included in this grammar of Toura are 7 brief chapters on phonology. Be arth posits four level tones but sees these as surface realisations of six morphotonemes. A tone in the same syllable can usually be followed only by an equal or lower tone not a higher one.
KEYWORDS: Toura, Mande, West Africa, level tones, tone rules

9025
Be arth, Thomas and Hugo Zemp (1967) "The Phonology of Dan (Santa)" Journal of African Languages. 6.1, pp. 9-29
ABSTRACT: Five phonemic level tones are posited for Dan, and justified by contrast
in substitution frames.
KEYWORDS: West Africa, Mande, Dan, level tones

9026
Bee, Darlene (1965) "Usarufa Distinctive Features and Phonemes" Linguistic Circle of Canberra Publications, Series A. 6, pp. 39-68
NOTES: Orginally submitted as a Master's thesis at Indiana University. Reprinted in McKaughan 1973 pp. 204-224.
ABSTRACT: A Jakobsonian approach to features is applied to Usarufa. Tone is discussed under prosodic features which are distinguished from inherent features.
KEYWORDS: East New Guinea Highland Stock, Usarufa, New Guinea

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9027
Bee, Darlene and Kathleen Glasgow (1962) "Usarufa Tone and Segmental Phonemes" Oceania Linguistics Monographs, University of Sydney. 6, pp. 111-127
NOTES: Studies in New Guinea Linguistics. Reprinted in McKaughan 1973 pp. 190-203.
ABSTRACT: Three phonemic tones (high, low, falling) are posited and

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their distribution and perturbations are described.
KEYWORDS: tone rules, tone distribution, stress and tone, Usarufa New Guinea, East New Guinea Highland Stock

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9028

Bell, Herman (1968) "The Tone System of Mahas Nubian" Journal of African Languages. 7.1, pp. 26-32
ABSTRACT: Bell reviews earlier work which has generally discounted tone in Nubian and proposes an analysis of the major facts of the Mahas tone system. Words may be up to three syllables long and may consist of all low or all high toned syllables or of one or two low syllables followed by one or two high syllables. Low does not follow high in the same word. In compound formation the first element takes all low tones. Rules for allotones under conditions of emphasis and in phrase-final position are discussed.
KEYWORDS: Mahas, Nubian, North Africa, tone rules, domain of tone

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9029

Bendor-samuel, John and Inge Meier (1967) "Some Contrasting Features of the Izi Verbal System" Journal of African Languages. 6.1, pp. 30-41
ABSTRACT: A detailed investigation of tone patterns associated with affirmative active verbs.
KEYWORDS: West Africa, Lower Niger, Kwa, Izi, morphotonology, upstep, tone rules

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9030

Benedict, Paul (1948) "Tonal Systems in Southeast Asia" Journal of the American Oriental Society. 68.4, pp. 184-191
ABSTRACT: The general configuration of the tonal systems of Shanghai, Cantonese, Annamese, Siamese, and Burmese are presented. Special attention is given to the number and kind (level or contour) of tonemes, distribution of tones and syllable types, correlation between tones and initials of the syllables, possibility of tonal contrast in unstressed syllables, and the phonemic status of creaky voice. It is noted that possibilities of tonal contrast
are reduced in syllables with voiceless stop finals, syllables with creaky voice, and reduced syllables with zero stress. Also suggested are methodological procedures for the analysis of tonal systems.
KEYWORDS: consonant types and tone, tone distribution, techniques for tonal analysis, China, Southeast Asia

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9031

Bennett, Patrick (1974) "Tone and the Nilotic Case System" Bulletin of

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the School of Oriental and African Studies, London. 37.1, pp. 19-28
ABSTRACT: In a number of Nilotic languages (Maasai, Kalenjin, Teso, etc. But not the Luo group) there is anominative/accusative case marking of nouns based exclusively on tonal differentiation. Bennett discusses these and considers evidence for possible suffixal origin, and/or the possibility of borrowing of case distinctions from Cushitic where they are widely distributed.
KEYWORDS: syntactic structure and tone, borrowing, Nilo-Saharan, Nilotic, East Africa, Cushitic

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9032
Benson, Peter, Timothy Smith, and Linda ArreaGa (1974) "Lateralization of Linguistic Tone - Evidence from Cantonese" Cerebral Dominance. Linda Rogers (ed.) Brain Information Service, University of California, Los Angeles. pp. 19-20
NOTES: The Volume is Brain Information Service Conference Report 34; Conference
on January 5, 1973.
ABSTRACT: In a dichotic listening experiment designed to test the conclusions of the Van Lancker and Fromkin study of ear advantage in perception of Thai tones by groups of Thai and English listeners it was found that no ear advantage could be shown for Cantonese tones for either English or Cantonese subjects. the authors point out that in the Thai experiment, subjects had the words spelled in Thai and Roman orthography where as in the Cantonese experiment only Chao tone letters were given.
KEYWORDS: dichotic listening

9033
Bergman, Richard (1971) "Vowel Sandhi and Word Division in Igede" Journal of West African Languages. 8.1, pp. 13-25
ABSTRACT: This paper discusses vowel elision and coalescence in Igede, which has four contrastive level tones. Tonal changes sometimes also result from the juxtaposition of two vowels. Rules for tonal assimilation and tone changes are given.
KEYWORDS: tone rules, Igede, Kwa, West Africa, level tones

9034
Berry, Jack (1970) "A Note on the Prosodic Structure of Krio" IJAL. 36.4, pp. 266-267
ABSTRACT: Repeats the proposition that Krio (of sierra Leone) is a tone language and corrects the simple view that high tone corresponds to stress in english. Some remarks on lexical and intonational variation of pitch are also included.
KEYWORDS: stress and tone, loanwords, intonation and tone, Krio West Africa, Atlantic Creole

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9035
Beuchat, P-D (1962) "Additional Notes on the Tonomorphology of the Tsonga Noun" African Studies. 21.3-4, pp. 105-122
ABSTRACT: A restatement of Cole-Beuchat 1959.
KEYWORDS: Tsonga, Narrow Bantu, Benue-Congo, Southern Africa, morphotonology

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9036
Bittle, William (1963) "Kiowa-apache" Studies in the Athapaskan Languages. Hoijer, Harry et al. (eds.), University of California Press, Berkeley. pp. 76-101
NOTES: University of California Publications in Linguistics Volume 29
ABSTRACT: A general structuralist description of Kiowa-Apache phonology, morphology and syntax includes mention of its two-level tone system. All citations are fully tone-marked.
KEYWORDS: Kiowa-Apache, Athapaskan, North America, Apachean

9037
Black, J. W. (1949) "Natural Frequency, Duration, and Intensity of Vowels in Reading" Journal of Speech and Hearing Disorders. 14.3, pp. 216-221
ABSTRACT: Paper contains mean values of fundamental frequency measurements of 11 vowels as spoken by 16 speakers of American English. Results of frequency measurements show that frequency varies with the openness of the vowel; the more open, the lower the frequency.
KEYWORDS: vowel height and tone, intrinsic pitch of vowels, acoustics,

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9038
Blair, Robert (1964) Yucatec maya Noun and Verb Morphosyntax. Indiana University, Bloomington.
NOTES: Prof. thesis.
KEYWORDS: morphotonology, Yucatec, mayan, Central America

9039
Bolinger, Dwight (ed.) (1972) Intonation. Penguin, Baltimore. 464 pp.
ABSTRACT: A collection of reprinted articles dealing with intonation, tone and related issues.
KEYWORDS: intonation and tone, music and tone, consonant types and tone, instrumental study of tone, acoustics, intonation

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9040
Bot Za Njock, Henri (1964) "Les Tons En Basa" Journal of African Languages. 3.3, pp. 252-259
ABSTRACT: A brief description of tonal contrasts in Basa (or Mbene, spoken in the Cameroons).
KEYWORDS: Basa, Narrow Bantu, Benue-Congo, West Africa

9041
Boxwell, Helen and Maurice Boxwell (1966) "Weri Phonemes" Linguistic Circle of Canberra Publications, Series A. 7, pp. 77-93
NOTES: Papers in New Guinea Linguistics, No. 5
ABSTRACT: In the course of an outline of the phonology of Weri a two-level tone system is described. The pitch range between high and low is said to be narrow. Dissyllabic words with low-low have not been found nor have four-syllable words in which the 2nd and/or 3rd syllables are low while 1st and 4th are high.
KEYWORDS: tone distribution, Weri, New Guinea

9042
Bradley, Cornelius (1911) "Graphic Analysis of the Tone-accents of the Siamese Language" Journal of the American Oriental Society. 31.3, pp. 282-289
ABSTRACT: This paper reports the results of the first instrumental analysis of Thai tones. Measurements of the long open syllable [naa] pronounced on the 5 Thai tones - circumflex, rising, falling, middle, and depressed - were made with arousselot appa ratus and plotted on a graph. It was found that none of the tones are strictly level throughout the duration of the syllable. The tones fall into 2 groups based on the range of pitch contour - circumflex, falling, and rising with a large pitch contour; middle and depressed with a small pitch contour. The first group of tones occur only on syllables that contain at least 2 sonorant segments; the latter group is not so restricted. Mention is also made of a sixth tone - short high - that is found only in short syllables.
KEYWORDS: Southeast Asia, Tai, Siamese, instrumental study of tone

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9043
Bradley, Cornelius (1916) "On Plotting the Inflections of the Voice" University of California Publications in Anthropology Archaeology and Ethnology. 12.5, pp. 195-218
ABSTRACT: Two necessary coordinates for voice inflection are pitch level (space coordinate) and pitch movement (time coordinate). Based on measurements taken from the rousselot apparatus, Bradley shows how the time-space coordinates for voice inflection can be represented graphically. It is claimed that these graphic representations directly reflect how voice inflection is represented in the human

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mind. No supporting empirical evidence is given other than the general observation that the 'human mind habitually coordinates space and time'. The tones of Thai and Peking Chinese are used for illustration.
KEYWORDS: China, Southeast Asia, Tai, Siamese, Pekinese, Mandarin, psychological reality, instrumental study of tone

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9044

Bright, Jane (1964) "The Phonology of Smith River Athapaskan (Tolowa)" IJAL. 30.2, pp. 101-107
ABSTRACT: Description of the phonology, including segmental phonemes, their phonetic characterizations and allophonic distributions, and justificaion for aspects of the analysis; illustration of the pitch accent system and the limited distribution of the pitches; and syllable types and the restrictions on the distribution of phonemes within syllables. Dicusses the consonant system, citing cognates from Kutchin.
KEYWORDS: North America, Tolowa, Athapaskan, tone distribution, pitch accent

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9045

Bright, William O. (1957) "Singing in Lushai" Indian Linguistics. 17 pp. 24-28,
ABSTRACT: Bright compares lexical tones with the musical melody of a 'new' and an 'old' song in Lushai and finds a lack of correspondence. The redundancy of tone is taken to permit its sacrifice in singing without loss of intelligibility.
KEYWORDS: music and tone, Lushai, Tibeto-Burman, Indian Subcontinent

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9046

Bright, William O. (1957) "Alternations in Lushai" Indian Linguistics. 18, pp. 101-110
ABSTRACT: Bright discusses phonological and morphological conditions under which the falling and rising tones alternate with level tones.
KEYWORDS: Lushai, Indian Subcontinent, Tibeto-Burman, morphotonology, tone rules, consonant types and tone

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9047

Bunkowske, Eugene (1972) "Eliding Boundaries in Ogoja Yala" Research Notes, University of Ibadan. 5.2-3, pp. 59-71
NOTES: Paper presented at a Round Table Meeting on Elision and Assimilation in West African languages, University of Ibadan, May, 1971.
ABSTRACT: Bunkowske discusses cases of assimilation and elision across

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word boundaries in Yala (of Ogoja, Nigeria). Assimilatory processes affect both vowel quality and tones of adjacent vowels. Tone assimilation is always upward but is usually limited to the height of the lower of the two tones bordering the affected tone.
KEYWORDS: tone rules, Yala, Kwa, West Africa

9048
Burling, Robbins (1957) "Lushai Phonemics" Indian Linguistics. 17, pp. 148-155
ABSTRACT: In treating Lushai phonology, burling notes four contrastive tones high,
low, high falling, and low falling, and discusses phonetic variants.
KEYWORDS: Lushai, Tibeto-Burman, Indian Subcontinent

9049
Burling, Robbins (1967) Proto Lolo-Burmese. Mouton, the Hague. 101 pp.
ReviEwed By: Matisoff, James. Language 44.4: 879-897. 1968.
NOTES: Also Published as IJAL 33:2, Part 2, publication 43. 1967.
ABSTRACT: A reconstruction of Proto Lolo-Burmese is attempted based on a comparison of 3 Burmish languages - modern colloquial Rangoon Burmese, Maru, and Atsi, and 3 Loloish languages - Lahu, Lisu, and Akha.
KEYWORDS: tonal development, Southeast Asia, Tibeto-Burman, Lolo-Burmese, consonant types and tone, tone splitting, Rangoon Burmese, Burmese, Maru, Atsi, Lahu, Lisu, Akha

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9050
Burssens, Amaat (1939) Tonologische Schets Van Het TshiLuba. De Sikkel, Antwerp. 232 pp.
NOTES: Kongo-Overseе Bibliotheek.
KEYWORDS: Luba, Central America, Benue-Congo, Narrow Bantu, morphotonology

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9051
Burssens, Amaat (1939) "Le Luba, Langue a Intonation et Le Tambour-Signal" Proceedings of the 3rd International Congress of Phonetic Sciences. Blancquaert, Edward and William Pee (eds.) Ghent. pp. 504-507
KEYWORDS: Luba, drum language, Central Africa, Benue-Congo, Narrow Bantu, music and tone

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9052
Burssens, Amaat (1939) "Le TschiLuba, Langue a Intonation" Africa. 12

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pp. 267-284
KEYWORDS: tone rules, morphotonology, Narrow Bantu, Benue-Congo, Central Africa, Luba

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9053
Capell, A. (1949) "Two Tonal Languages of New Guinea" Bulletin of the School of Oriental and African Studies, London. 9, pp. 184-199
ABSTRACT: Reports on the two-level tone contrast in two Austronesian languages of New Guinea, Yabem and BukAwa, and discusses a possible substratum explanation for this phenomenon in view of the general lack of tone in Austronesian languages.
KEYWORDS: Yabem, Austronesian, New Guinea, BukAwa, tonal development

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9054
Carrell, Patricia (1970) A Transformational Grammar of Igbo. Cambridge University Press. 123 pp.
Reviewed By: Hyman, Larry and Skip Robinson, Journal of Linguistics 10.1, pp. 143-153, 1974
ABSTRACT: A chapter on tone occupies pp. 83-99. Carrell uses the features [high] and [echo] ; all non-high tone are [-echo] but high tones which are on the same phonetic level as an immediately preceding high tone have [+echo] introduced by rule, thus preventing adjacent high tones from terracing when there is no downstep. Tranformations which introduce boundaries precede precyclical and cyclical tone rules t hat change tone feature values. No floating tones are used. Finally post-binary rules assign numerical values to describe systematic phonetic pitch levels.
KEYWORDS: tone rules, tone features, boundaries, cyclic rules, Igbo, Kwa, West Africa, Lower Niger

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9055
Carrington, J. F. (1943) "Tonal Structure of Kele(Lokele)" African Studies. 2, pp. 193-209
KEYWORDS: Kele, Narrow Bantu, Central Africa, Benue-Congo, morphotonology, tone rules

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9056
Carter, Hazel, (1962) Notes on the Tonal System of Northern Rhodesian Plateau Tonga. H. M. Stationery Office, London. 109 pp.
NOTES: Colonial Research Study No. 35.
KEYWORDS: morphotonology, tone rules, Tonga, Southern Africa, Narrow Bantu, Benue-Congo

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9057
Carter, Hazel (1971) "Morphotonology of Zambian Tonga: Some Developments of Meeussen's System -1" African Language Studies. 12, pp. 1-30
NOTES: Part 2 in African Language Studies 13, pp. 52-97. 1972.
ABSTRACT: This paper presents a development and extension to nonverbal forms of Meeussen's account of morphotonology in Tonga which is based on a neutral/ determinant underlying contrast and realisational rules. The extension tonominal structures depends importantly on ordering the rules for resolution of combinations.
KEYWORDS: Tonga, Narrow Bantu, Southern Africa, Benue-Congo, morphotonology, tone rules, rule ordering

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9058
Carter, Hazel (1972) "Morphotonology of Zambian Tonga: Some Development of Meeussen's System - II" African Language Studies. 13, pp. 52-87
ABSTRACT. Continued from Carter 1971, this article deals with further problems relating to verbal radicals of the form C(V) and possessive prefixes. Gener al reflections on syntax and the tonal system lead to speculations on a "conspiracy" which tends to prefer signalling of syntactic relationships by means of the tonal system at the expense of lexical contrast.
KEYWORDS: Tonga, Narrow Bantu, Southern Africa, Benue-Congo, morphotonology, tone rules, syntactic structure and tone, phonological conspiracies

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9059
Carter, Hazel (1973) Syntax and Tone in Kongo. School of Oriental and African Studies, University of London.
NOTES: Revised version of a Prof. thesis titled 'Syntactic Tone Phrases in Kongo' submitted to London University in 1971.
KEYWORDS: Syntactic structure and tone, Kongo, Benue-Congo, Narrow Bantu, Central Africa, morphotonology, tone rules

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9060
Carter, Hazel (1973) "Tonal Data in 'Comparative Bantu'" African Language Studies. 14, pp. 36-52
ABSTRACT: Carter reviews the tonal data presented in Guthie's 'Comparative Bantu', and concludes that Guthie's tonal typologies relate languages in a way that is not inconsistent with his hypotheses concerning Bantu dispersion but notes that his typology omits many qualifications. Carter illustrates some of the complexities in correspondences of Bobangi, Nanyika, Tonga, Yao and Zoombo (Kongo) with 'Common Bantu. She suggests that morphotonologic, alternations may

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provide ways of characterizing tonal systems in ways that Guthie's typology doesn't, listing reversal, doubling, anticipation, displacement among the rules and other features of Bantu tone systems which distinguish them from each other despite their common two-level nature. Four maps are incuded.
KEYWORDS: morphotonology, tone correspondences, tone typology, Narrow Bantu, Benue-Congo, Central Africa, East Africa, Southern Africa

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9061
Carter, Hazel (1974) "Negative Structures in the Syntactic Tone-phrasing System of Kongo" Bulletin of the School of Oriental and African Studies, London. 37.1, pp. 29-40
KEYWORDS: Kongo, Narrow Bantu, Benue-Congo, Central Africa, syntactic structure and tone, Zoombo, morphotonology, tone rules

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9062
Caughley, Ross (1970) "Pitch, Intensity, and Higher Levels in Chepang" Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics. 3.1, pp. 143-157
KEYWORDS: Tibeto-Burman, Chepang, domain of tone, syllables, stress and tone, intonation and tone, tone distribution, Bodic, Indian Subcontinent

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9063
Chang, C. T. (1958) "Tones and Intonation in the Chengtu Dialect (Szechuan, China)" Phonetica. 2, pp. 59-85
ABSTRACT: The four tones of the Chengtu dialect are described as they are pronounced on monosyllables and in combinations of 2, 3, and 4 syllables. Intonation is seen to consist of 3 factors: The pitch level on which the sentence is spoken, the range of pitch the sentence covers, and perturbation of the final syllable of the sentence.
KEYWORDS: Chengtu, intonation and tone, Sinitic, China

9064
Chang, Kun (1953) "On the Tone System of the Miao-Yao Languages" Language. 29, pp. 374-378
ABSTRACT: Based on the distribution of tones and initial consonants in cognate words among 7 Miao-Yao dialects, Chang hypothesizes that the pre-Miao-Yao language had voiced, voiceless, and aspirated initials and 4 tones which later developed into voiceless and aspirated initials and 8 tones. Two of these Miao-Yao dialects are reported to have 5 level tones of different heights.

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KEYWORDS: Southeast Asia, Miao-Yao, tonal development, consonant types and tone, level tones, Miao, Yao, China, tone splitting

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9065

Ch'ang-p'ei, Lo (1945) "A Preliminary Study on the Trung Language of Kung Shan" Harvard Journal of Asiatic Studies. 8.3-4, pp. 343-348
ABSTRACT: Reports 6 tones for Trung, a language spoken in the northwestern part of Yunnan province China.
KEYWORDS: level tones, contour tones, Tai, China

9066

Chao, Yuen-ren (1930) "A System of Tone Letters" Maitre Phonetique. 30 pp. 24-27
ABSTRACT: This article introduced the now widely-used 'tone letter' notation, with examples from English, Cantonese, and Tibetan.
KEYWORDS: transcription

9067

Chao, Yuen-ren (1933) "Tone and Intonation in Chinese" Bulletin of the Institute of History and Philology, Academia Sinica. 2, pp. 121-134
ABSTRACT: In this paper Chao discusses some problems of methodology in the study of tone and intonation in Chinese. Included are 'etymological tone' - pitch on individual lexical items in isolation, 'neutral intonation' - influence of tones on each other in connected speech, and 'expressive intonation' - pitch movements which indicate the mood or attitude of the speaker.
KEYWORDS: China, intonation and tone, elicitation of tone, emotion and pitch, intonation, Mandarin, Sinitic

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9068

Chao, Yuen-ren (1934) "The Non-uniqueness of Phonemic Solutions of Phonetic Systems" Bulletin of the Institute of History and Philology, Academia Sinica. 4.4, pp. 363-397
NOTES: Reprinted in Joos (ed.), Readings in Linguistics I, 4th edition, Chicago: University of Chicago Press, pp. 38-54.
ABSTRACT: A case of an extrinsic relationship between tone and vowel height is illustrated in Foochow Chinese. For discussion, see pages 41, 44, 48, and 49 in reprint.
KEYWORDS: China, Foochow, Sinitic, vowel height and tone, tonal development

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9069

Chao, Yuen-ren (1948) Mandarin Primer. Harvard University Press. 142 pp.
ABSTRACT: On pp. 24-28 Chao presents a general overall description of Mandarin Chinese tone, tone sandhi, stress, neutral tone, and phonetic features of syllables under the neutral tone.
KEYWORDS: China, Mandarin, Pekinese, tone rules, stress, neutral tone, toneless morphemes, tone sandhi,

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9070

Chao, Yuen-ren (1956) "Tone, Intonation, Singsong, Chanting, Recitative, Tonal Composition, and Atonal Composition in Chinese" For Roman Jakobson, Essays on the Occasion of His Sixtieth Birthday. Halle, Morris (ed.) Mouton, the Hague. pp. 52-59
ABSTRACT: This paper characterizes and compares the different functions of the pitch of the voice in the Chinese language, Chinese prosody, and Chinese music. Included are tone, intonation, singsong (certain specialized and stylized forms of speaking based upon the tones), chanting (certain specialized types of reading), recitative in traditional Chinese drama, and song composition with and without regard to the element of tone.
KEYWORDS: China, Sinitic, intonation and tone, music and tone, literary style and tone, Mandarin

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9071

Cheng, Chin-chuan (1968) "English Stresses and Chinese Tones in Chinese Sentences", Phonetica. 18, pp. 77-88
ABSTRACT: Chinese speakers in the United States usually speak Chinese with English
words inserted. In Mandarin Chinese, a tone-sandhi rule changes a third tone preceding another third tone to a second tone. The third tone is low; the three other tones are high.
It is the [-high] feature that triggers this Chinese tone-sandhi rule. Using this tone-sandhi rule, Cheng designed an experiment to find out how English stresses are interpreted by Chinese speakers when they speak Chinese with English words inserted.
Two kinds of Chinese sentences were constructed for 15 subjects to read: in type a, Chinese third-tone words precede English words with different stresses on the first syllable; in type b, English words with different stresses on the last syllable precede Chinese third-tone words. The results of the experiment show that only the English weakest stress causes the preceding Chinese third-tone words to undergo tone-sandhi. The English primary, secondary, and tertiary stresses are interpreted as having a [+high] feature, while the weakest stress is regarded as [-high]. It is the interpreted [-high] feature that allows the Chinese tone-sandhi rule to apply.

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KEYWORDS: China, Sinitic, Mandarin, tone rules, tone perception, English, loanwords

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9072

Cheng, Chin-chuan (1970) "Domains of Phonological Rule Application" Project on Linguistic Analysis; Phonology Laboratory, University of Cali fornia, Berkeley. 10, pp. 1-21

ABSTRACT: This paper attempts to show that the size of the domain of phonological processes is determined by both surface syntactic structure and attitudinal factors specified in the deep structure. A tone sandhi rule in Mandarin Chinese is used for illustration. The rule is formulated to apply simultaneously across word boundaries, having d emonstrated that the rule cannot apply cyclically. The size of the domain of application of the tone sandhi rule is shown to depend on both the level of syntactic structure and the tempo of the sentence, which corresponds to various degrees of casualness with which a sentence is produced. The size of the domain increases as the speed with which the sentence is produced increases. Cheng's analysis requires that the deep structure of a sentence contain a node labeled attitudinal that has associated with it 4 or 5 discrete degrees of casualness and that e ach category node in the surface structure has associated with it a number to indicate its
level of syntactic structure. It further requires that the tone sandhi, after its first simultaneous application, re apply obligatorily at the end of a phrase or sentence, optionally in the middle of a sentence.

KEYWORDS: Mandarin, tone rules, tone sandhi, syntactic structure and tone, application of phonological rules, Sinitic

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9073

Cheng, Chin-chuan (1973) A Synchronic Phonology of Mandarin Chinese. Mouton, the Hague. 92 pp.

NOTES: Earlier draft appears in Project on Linguistic Analysis 2nd Series 14: cc1-cc101. Phonology Laboratory, University of California, Berkeley. 1971.

ABSTRACT: Only 4 underlying tones are posited for Mandarin Chinese; the neutral tone' is claimed to be fully predicatable. Stress assignment at the word level is assumed to operate without exception. All unstressed syllables take the neutral tone. For syllables that would otherwise prove to be exceptions to the neutral tone rule, a diacritic fe ature neutral is assigned to the syllable in question in the lexical re presentation. This use of a diacritic feature would appear to be a counterexample to Chomsky-Halle's claim that diacritic features may only be associated with morphemes. It is argued that those s yllables with the diacritic feature neutral must still be specified for tone in o rder to account for forms that occur with full tones in some contexts, neutral tones in other contexts and forms that occur with two alternate pronunciations - one with a full tone, and the other with the neutral tone. For the former case, a stress and tone recovery rule is suggested

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but never demonstrated; for the latter case, a double entry in the lexicon is proposed. One entry would have the diacritic feature neutral , the other would not. A tone sandhi rule that changes the 3rd tone to a 2nd tone preceding another 3rd tone is discussed in detail. I t is argued that the rule must apply simultaneously rather than cycli cally and that the size of its domain depends on semantic attitudinal fa ctors specified in the deep structure as well as surface syntactic struc ture (an apparent counterexample to Chomsky-Halle's claim that the surface structure is input to phonological component). The phonetic properties of the neutral tone are also examined.
KEYWORDS: China, Sinitic, Mandarin, neutral tone, tone rules, diacritic features, tone sandhi, application of phonological rules

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9074

Cheng, Robert (1968) "Tone Sandhi in Taiwanese" Linguistics. 41, pp. 18-42
ABSTRACT: This paper focuses on tonal behavior in Taiwanese (a South Min Chinese dialect spoken on the island of Taiwan). Included is a description of the
syllable, tonal morphophonemic alternations, distribution of the neutral tone, the relationship between syntactic structure and tonal groups, and non-phonemic changes of tones in different positions in sequences of 2 and 3 syllables. Actual frequencies are included.
KEYWORDS: China, Taiwanese, tone rules, instrumental study of tone syntactic structure and tone, morphotonology, Sinitic

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9075

Cheng, Robert (1973) "Some Notes on Tone Sandhi in Taiwanese" Linguistics. 100, pp. 5-25
ABSTRACT: A reconsideration of certain aspects of the analysis of tone sandhi in Taiwanese presented in Cheng 1968. Discussion focusses on entering tones and rules to account for tone changes, the derivation of tones in the first syllable of a triplet and tones before the diminutive suffix, stress
and loss of tonal contrasts, language-specific markedness in the lexical representat ion of tones and the so-called neutral tone and its derivation.
KEYWORDS: tone sandhi, Taiwanese, stress and tone, vowel length and tone, markedness conventions, tone features, neutral tone, China Sinitic

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9076

Chiang, Helen (1967) "Amoy-Chinese Tones" Phonetica. 17.2, pp. 100-115
ABSTRACT: Spectrographic analysis of the Amoy tones shows that the tones can be divided into 2 groups - the long tones with an average duration of 45 centirecords, and the short tones with an average

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duration of 15 c entirecords. Amoy has 7 phonetic tones: high level, low level, high falling, low falling, low rising, short high, and short low, but only 5 phonemic tones with 2 short tones (high and low) as allophones of the high falling and low falling long tones.
KEYWORDS: Sinitic, China, Amoy, acoustics

9077
Cole, Desmondd (1969) "Tonal Morphology in Tswana" Ethnological and Linguistic Studies in Honour of N. J. Van Warmelo. Department of Bantu Administration and Development, South Africa. pp. 39-45
KEYWORDS: Tswana, Narrow Bantu, Benue-Congo, Southern Africa, morphotonology

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9078
Cole-Beuchat, P-D (1959) "Tonomorphonlogy of the Tsonga Noun" African Studies. 18.3, pp. 133-145
ABSTRACT: This article discusses the limitations on combinations of high and low tones on Tsonga nouns with varying numbers of syllables. A basic tonal pattern for nouns occurs if the noun is subject preceding a verb or object after an all low tone verb and in some other positions. Elsewhere the basic pattern is perturbed, for example after a negative verb a noun becomes all high. Irregular nouns conform to these rules if their prefix and stem are treated as a single tone-bearing unit.
KEYWORDS: Tsonga, Southern Africa, domain of tone, morphotonology Narrow Bantu, Benue-Congo

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9079
Contreras, Heles (1969) "Simplicity, Descriptive Adequacy, and Binary Features" Language. 45.1, pp. 1-8
ABSTRACT: Part of this article attempts to show that pitch lowering (raising) rules are better formulated with multivalued features instead of binary features. No actual language examples are given, however. Arguments are based on the simplicity criterion proposed by Halle and generality of phonological rules.
KEYWORDS: tone features, simplicity measures, polar tone, tone rules

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9080
Cook, Eung-do (1971) "Vowels and Tones in Sarcee" Language. 47.1, pp. 164-179
ABSTRACT: Cook points out that, in Sarsi, a long vowel with an inflected (contour)
tone and an overlong vowel with level tone can be regarded as the resul t of juxtaposition of identical vowels with unlike and like level tones

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respectively. Tone assigned by paradigmatic and syntagmatic considerations are discussed and it is concluded that reference to surface syntactic structure is inadequate for correct formulation of rules. Syntagmatic tone assignment
is compared to downstep and upstep phenomena in African languages, and an upward terracing is proposed for some verbal constructions.
KEYWORDS: vowel length and tone, syntactic structure and tone, application of phonological rules, downstep, upstep, tone rules, Barsi, Athapaskan, North America, Xhosa, Southern Africa, Narrow Bantu

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9081
Cook, Eung-do (1972) "On the Relativity of Tones" Lingua. 29.1, pp. 38-37
ABSTRACT: Considers general characteristics of tone languages. Reviews proposed typologies of tone languages. Proposes an analysis of downdrift in Shitswa which involves the use of a diacritic feature [+down] assigned to all and only those high-toned syllables whose pitch is lowered where there is no conditioning low-toned syllable immediately preceding.
KEYWORDS: tone typology, downstep, downdrift, morphotonology, tone rules, Narrow Bantu, Central Africa, toneless morphemes, application of phonological rules, Shitswa

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9082
Cope, A. T. (1959) "Zulu Tonology" Afrika Und Ubersee. 43.3, pp. 190-200
ABSTRACT: Three tones, high, low and falling, are posited. The falling toneme always occurs with a long vowel. Tonal assimilation is always from low to high. With verbs the tones of the root syllables undergo changes depending on the tense; with
nouns grammatical tones on prefix syllables may cause the lexical tone to change. Cope concludes therefore that grammatical tone is more important in Zulu than lexical tone.
KEYWORDS: Zulu, Nguni, Benue-Congo, Narrow Bantu, Southern Africa morphotonology, tone rules, vowel length and tone

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9083
Cope, A. T. (1970) "Zulu Tonal Morphology" Journal of African Languages. 9.2, pp. 11-52
KEYWORDS: morphotonology, Narrow Bantu, Benue-Congo, Zulu, Nguni Southern Africa

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9084
Cornyn, William (1944) Outline of Burmese Grammar. Linguistic Society of America. 34 pp.
NOTES: Supplement to Language 20.4, Language Dissertation No. 38
ABSTRACT: Cornyn sets up 4 tone phonemes for Burmese. Included is a brief description of tone sandhi phenomena.
KEYWORDS: Tibeto-Burman, Lolo-Burmese, Burmese, tone sandhi, consonant types and tone

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9085
Coupez, A. and A. E. Meeussen (1961) "Notation Pratique De La Quantite Vocalique et De La Tonalite En Rundi et Rwanda" Orbis. 10.2, pp. 429-433
KEYWORDS: Rundi, Rwanda, Narrow Bantu, Central Africa, transcription, vowel length and tone

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9086
Courtenay, Karen (1968) A Generative Phonology of Yoruba. University of California, Los Angeles.
ABSTRACT: Chapter 4 discusses the tonal system of Yoruba as a type of terraced level system. Courtenay points out that the derived gliding tones of Yoruba also conform to the downdrift pattern and can be generated by the same rules that deal with other phenomena plus a low-level gliding rule affecting high-low or low-high sequences. Tone is also discussed in some of the other p-rules in chapter 5 and in chapter 6 on reduplication. In an appendix ideophone s are de alt with, including at leastone subtype which has a high-mid-low-mid tone pattern and a generally pejorative meaning perhaps 'deviation from the noun'. Such patterns are however not typically semantically distinct.
KEYWORDS: Yoruba, Kwa, West Africa, tone rules, downstep, downdrift, tonal iconism

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9087
Courtenay, Karen (1971) "Yoruba: a 'Terraced-level' Language with Three Tonemes" Studies in African Linguistics. 2.3, pp. 239-255
ABSTRACT: This paper attempts to show that the downstep phenomenon, although generally restricted to language with only 2 contrastive tones, also occurs in Yoruba, for which 3 contrastive tones must be posited - high, mid, and low. The lowered mid, rising, and falling tones that also occur phonetically are all derived by phonological ru le. Downstep is shown to result from either a deleted or assimilated low tone. No distinction is made between 'automatic downstep' and 'nonautomatic downstep'; they are regarded as instances of the same phonetic phenomenon. The downstep rules are noncyclic; they apply across all boundaries within a breath group. Rules that delete segmental features of vowels without deleting tonal features are employed in this

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analysis.
KEYWORDS: West Africa, Yoruba, Kwa, Mandekan, Mande, downstep, tone rules

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9088

Cowan, George (1948) "Mazateco Whistle Speech" Language. 24.3, pp. 280-286
ABSTRACT: Cowan describes a surrogate language in use among male speakers of Mazatec which operates by copying the tonal contour of utterances by whistling. Despite many possible ambiguities, whistled speech is apparently not limited to only a few stock items.
KEYWORDS: whistle speech, Mazatec, Mazatecan, Otomanquean, Central America

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9089

Cowan, H. K. J. (1953) "Een Toontaal in Nederlands Nieuw-guinea" 13.2 pp. 1-6
ABSTRACT: Cowan reports that Sekou is a tone language with three levels that contrast lexically and in morphological functions.
KEYWORDS: New Guinea, Sekou, morphotonology

9090

Cyffer, Norbert (1971) "Versuch Einer Beschreibung Der Tonalen Verhaltnisse Im Kanuri Von Maidu Gun" Afrikansiche Sprachen Und Kulturen - Ein Querschnitt. Six, Veronika, et al. (eds.) Deutsches Institut Fur Afrika-forschung, Hamburg. pp. 235-245
KEYWORDS: Kanuri, West Africa, Nilo-Saharan

9091

Darden, Bill (1970) "Accent in the Lithuanian Noun Declension" Baltic Linguistics. Magner, Thomas and William Schmalstieg (eds.) Pennsylvania State University Press. pp. 47-52
KEYWORDS: morphotonology, pitch accent, Lithuanian, Baltic, Europe

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9092

Davis, Irvine (1962) "Phonological Function in Cheyenne" IJAL. 28.1, pp. 36-42
ABSTRACT: Cheyenne has two contrastive level tones - high and low. Long vowels are
interpreted as geminate clusters on the basis of their pitch patterns.

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Rising and falling pitch glides as well as high level and low level pitch occur on both long vowels and on clusters of unlike vowels. Since pitch glides occur only on long vowels and on clusters of unlike vowels, they are analyzed as sequences of the two level tone phonemes.
KEYWORDS: vowel length and tone, Cheyenne, North America, contour tones, Algonquian

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9093
Davis, Marjorie and Margaret Walker (1955) "Cuicateco: Morphemics and Morphophonemics" IJAL. 21.1, pp. 46-51
ABSTRACT: Description and exemplification of morpheme classes, including affixes, their associated meanings, and their distributional properties; simple and complex verb and noun stems and combinatorial possibilities for complex stems; and particles. Description and exemplification of morphophonemic processes, including metathesis. tone changes (phonological and morphological), vowel harmony, vowel and tone suppletion, addition, and deletion.
KEYWORDS: Cuicatec, Mixtecan, morphotonology, tone sandhi, Otomanguean, Central America

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9094
De Angulo, Jaime (1926) "Tone Patterns and Verb Forms in a Dialect of Zapotek" Language. 2.4, pp. 238-250
ABSTRACT: The Zapotec dialect of Teotitlandel Valle is presented as a language in which tone is between being a morphological and a semantic factor. Many verb forms and affixes have fixed tones but others vary according to tense or person/gender. An interesting phenomenon is the occurrence of mirror-image ('flip-flop') tone patterns.
KEYWORDS: morphotonology, polar tone, Zapotec, Central America, Otomanguean

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9095
Dellinger, David (1967) "Notes on Akha Segmental Phonemes and Tones" Linguistic Circle of Canberra Publications, Series A-Occasional Papers. 9, pp. 35-43
NOTES: Papers in Southeast Asian Linguistics No. 1.
ABSTRACT: For Akha Dellinger suggests three level tones and a mid-low falling tone that occurs only in utterance-final position. Minimal contrasts are rare.
KEYWORDS: Southeast Asia, Tibeto-Burman, Akha, consonant types and tone, tone distribution, Lolo-Burmese

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9096

Delord, J. (1968) "Sur Le Kabre Du Togo. Jeux De Tons (Terrasses Tonales, Syllabes Longues et Tons Melodiques)" Bulletin D'I.F.A.N. 30, pp. 256-268
ABSTRACT: In Kabre, tones are more stable than tone-bearing elements. The two tones of a long syllable must be realized even if this distorts the word or its realization is displaced.
KEYWORDS: Kabre, Voltaic, West Africa, downdrift, vowel length and tone

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9097

Di Luzio, Aldo (1972) "Preliminary Description of the Amo Language" Afrika Und Ubersee. 56.1-2, pp. 3-61
ABSTRACT: Preliminary phonology, morphology, syntax and vocabulary of Amofrom field notes and recordings of Lukas. Includes a short section on establishment of the two-level tone system used in the transcription. Tone plays a significant role in the morphology.
KEYWORDS: morphotonology, Amo, Plateau, Benue-Congo, West Africa

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9098

Doke, C. M. (1923) "A Dissertation on the Phonetics of the Zulu Language" Bulletin of the School of Oriental and African Studies, London. 2.4, pp. 685-729
KEYWORDS: Zulu, Nguni, Southern Africa, Benue-Congo, Narrow Bantu

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9099

Dolphyne, Florence (1974) "Syllable Reduction and Syllable Loss in Tone Languages"
NOTES: Paper presented at the 11th West African Languages Congress, Yaounde, Cameroons.
ABSTRACT: This paper examines the loss and reduction of syllables in Brong and other Akan dialects. Superficially this process seems to be similar to what happens to unstressed syllables in English or French. However as stress is irrelevant in Akan, Dolphyne examines vowel height, consonant type and tones of reduced syllables. the affected syllables are those with high vowels following a sonorant consonant: with high tone the syllables are reduced to syllabic consonants, with low tone the syllable is lost.
KEYWORDS: tone rules, syllables, consonant types and tone, vowel height and tone, Akan, Volta-Comoe, Kwa, West Africa

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9100

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Donaldson, Jean (1963) White Tai Phonology. Hartford Seminary Foundation, Connecticut. 50 pp.
NOTES: A Master's thesis submitted to the Hartford Seminary Foundation.
KEYWORDS: Southeast Asia, Tai, White Tai, tone distribution, syllables, consonant types and tone, vowel length and tone, tone sandhi

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9101
Dow, Francis (1972) "A Discussion on Tone Sandhi Problems in Chinese" Journal of the International Phonetic Association. 2.1, pp. 13-19
ABSTRACT: Dow discusses the sandhi tones of sequences of tones in Pekinese, principally as affecting tone 3 (fall-rise). Using 8 informants he investigated disyllabic, trisyllabic and polysyllabic sequences of tone-3 syllables. He found that immediate constituent structure affected sandhi results of tone 3 and stress and speech tempo affected the tone 2 derived from tone 3.
KEYWORDS: tone sandhi, syntactic structure and tone, stress and tone, China, Pekinese, Mandarin, Sinitic

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9102
Downer, G. B. (1967) "Tone-change and Tone-shift in White Miao" Bulletin of the School of Oriental and African Studies, London. 30.3 pp. 589-599
ABSTRACT: Major developments in the tonal system of White Miao, and the major shifts in the tone of items in the dialect are described in terms of tone-changes and tone-shifts. By tone-change is meant the results of a split conditioned by syllable-prosodies and of merger with other tones, which give rise to changes in the overall tone system. Tone-change is essentially paradigmatic, and the result of factors internal to the syllable. Tone-shift, on the other hand, denotes the changes in realization of basic tones in certain environments. It is syntagmatic, and caused by factors external to the syllable. Three types of tone-shift are postulated - tone sandhi, analogical tone-shift, and compensatory tone-shift.
KEYWORDS: Southeast Asia, Miao-Yao, White Miao, tonal development tone splitting, consonant types and tone, tone sandhi

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9103
Dreher, J. J. and P. C. Lee (1966) Instrumental Investigation of Single and Paired Mandarin Tonemes. McDonnell-Douglas, Advanced Research Laboratory. Huntington Beach, California. 52 pp.
NOTES: DARL Research Communication No. 13, Douglas Paper 4156.
ABSTRACT: The commonly accepted 5 registers of Mandarin are verified and each shown to be approximately 36 hz wide, with a standard

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deviation of 1.29 hz on a normalized scale. The 68-percent normal population limits are delineated for the emphatic tone forms, as well as new 5-register number notations for tones actually produced in isolation and in couplets.
KEYWORDS: Mandarin, Sinitic, instrumental study of tone, level tones, contour tones, transcription

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9104
Dunstan, Elizabeth (1966) Tone and Concord Systems in Ngwe Nominals School of Oriental and African Studies, University of London.
NOTES: Prof. thesis
KEYWORDS: Ngwe, Bantoid, Benue-Congo, West Africa, tone rules, Bamileke, morphotonology

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9105
Dunstan, Elizabeth (1966) "Tone on Disyllabic Nouns in Ngwe" Journal of West African Languages. 3.1, pp. 33-38
ABSTRACT: Dunstan discusses the three tone classes of disyllabic nouns in Ngwe. Classes i and ii are low-low and low-high but the third class alternates and causes alternation in following items. Rules are given to explain this and other tonal phenomena. A solution employing floating tones is not considered.
KEYWORDS: polar tone, Ngwe, West Africa, Benue-Congo, tone rules Bantoid

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9106
Durand, Marguerite (1951) "Le Systeme Tonal Du Tahitien" Bulletin De La Societe De Linguistique De Paris. 47.1, pp. 126-139
ABSTRACT: Durand proposes a two way contrast of high-falling vs low tone in Tahitian with different allotones in open syllables and syllables checked with
a glottal stop.
KEYWORDS: Tahitian, Polynesian, Pacific Islands, Austronesian, tone distribution,

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9107
Dwyer, David (1971) "Mende Tone" Studies in African Linguistics. 2.2 pp. 117-130
ABSTRACT: After describing rules that will generate downstep patterns on the basis
of a single underlying binary tonal distinction, Dwyer considers the M ende peculiarities which seem to make a two-way underlying contrast too straight-forward. These can be de alt with by assuming additional vowels inserted by a tone contouring rule which adds an opposite tone vowel to

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a final vowel preceded by low, and natural assimilation and dissimila tion rules and a rule which neutralises high tone in nominal compounds. These rules have cognates in other Mande languages.
KEYWORDS: downstep, tone rules, Mende, Mande, West Africa, polar tone, segmental tone

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9108
Dwyer, David (1973), The Comparative Tonology of South-Western Mande Nominals. Michigan State University, East Lansing.
NOTES: Prof. thesis
ABSTRACT: Dwyer presents tone rules for nominals and nominal compounds in Mende, Loko, Bandi, Loma and Kpelle employing a segmental analysis, and discusses the evolution of underlying forms and tone rules from Proto-Southwestern-Mande to the present-day languages. Of special interest is the rule of tonal inversion for Loma which has opposite tones for underlying nominal forms to those for the other languages.
KEYWORDS: polar tone, tone rules, tonal development, loanwords, Mande, Mende, Loko, Bandi, Loma, Kpelle, segmental tone

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9109
Echeverria, Max and Helos Contreras (1965) "Araucanian Phonemics" IJAL. 31.2, pp. 132-135
ABSTRACT: In a brief phonemic description of an Araucanian dialect from Cautin (Chile) three pitch phonemes are employed to describe pitch patterns predicted from stress (itself predictable from syllabification) and terminal juncture.
KEYWORDS: stress and tone, intonation, Araucanian, Andean, Andean-Equatorial, South America

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9110
Edmondson, T. and John Benior-samuel (1966) "Tone Patterns of Etung" Journal of African Languages. 5.1, pp. 1-6
ABSTRACT: In Etung it is argued that certain linguistically significant generalizations are missed unless tone patterns are assigned to the word - a suprasegmental unit.
KEYWORDS: domain of tone, West Africa, Etung, Benue-Congo, suprasegmental tone, Bantoid

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9111
Egerod, Soren (1959) "Swatow Loan Words in Siamese" Acta Orientalia. 23.3-4, pp. 137-156
ABSTRACT: Consonant, vowel, and tonal correspondences for Swatow loanwords in modern Siamese are presented.
KEYWORDS: Southeast Asia, Tai, Siamese, Swatow, tone rules,

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loanwords

9112
Egerod, Soren (1961) "Studies in Thai Dialectology" Acta Orientalia. 26.1-2, pp. 43-91
ABSTRACT: This paper details tonal development in a number of Tai dialects of Thailand and Burma.
KEYWORDS: Southeast Asia, Tai, tonal development, consonant types and tone, vowel height and tone

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9113
Eijkman, L. P. H. (1903) "Radiographie Des Kehlkopfes" Fortschritte Auf Der Gebiete Der Rontgenstrahlen. 7, pp. 196-206
NOTES: Continued on pp. 310-318. 1904.
KEYWORDS: radiography, larynx, pitch control

9114
Ekblom, R. (1933) Die Lettischen Akzentarten. Arbeten Utgivna med understod av Vilhelm Ekman's Universitetsfond, Uppsala University.
ABSTRACT: Ekblom investigated duration, pitch and oral pressure of the various 'accents' of a central Latvian dialect. The final chapter discusses the historical origin of the present tonal accents in Latvian, tracing them back to 'acute' and 'circumflex' accents in Indo-European. the glottal accent (rising-falling with medial, glottal stop) is explained as due to over-articulation of a rising pitch contour. Comparisons are drawn with Lithuanian, Danish and Slavic languages.
KEYWORDS: Lithuanian, pitch accent, Latvian, Danish, Baltic, Germanic, Slavic, consonant types and tone

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9115
Elimelech, Baruch (1974) "Tone Alternations in the Etsako Verb" Working Papers in Phonetics, University of California, Los Angeles. 27, pp. 63-73
NOTES: Paper presented at the 3rd Annual Conference on African Linguistics, Queen's College, New York, 1973.
ABSTRACT: In this paper Elimelech provides a historical account of the various tense/aspect distinctions of the Etsako verb which are characterized by a complex set of tone alternations.
KEYWORDS: application of phonological rules, domain of tone, floating tones, suprasegmental matrix, suprasegmental tone, syllables syntactic structure and tone, tone rules, Etsako, Lyekhee, polar tone

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9116

Elimelech, Baruch (1974) "On the Reality of Underlying Contour Tones" Working Papers in Phonetics, University of California, Los Angeles. 27 pp. 74-83
NOTES: Paper was presented at the 48th Annual Meeting of Linguistic Association
of America, December 28-30, 1973, San Diego.
ABSTRACT: This paper argues for rising tones in the underlying representation of Kru. Phonetic rising tones occur on monosyllables and on the second syllable of disyllables. In a sequence of rising tones each subsequent tone begins at the end-point of the preceding tone. Elimelech argues that this can be accounted for by assuming underlying unit contour tones. The rising tones further do not behave like a low high sequence in downdrift rules.
KEYWORDS: application of phonological rules, contour tones, domain of tone, downdrift, segmental tone, suprasegmental tone, suprasegmental matrix, tone distribution, tone features, tone rules, Kru, Yoruba,

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9117

Elugbe, Benjamin (1970) "Predictable Variation and Redundancy" Research Notes, University of Ibadan. 3.2-3, pp. 50-56
ABSTRACT: In Ghotuo all prepausal high or mid tones are falling if they are realized on a verb, but not on other lexical categories. Elugbe considers two solutions, one involving 'contour tone features', the other involving a late 'low tone insertion transformation'.
KEYWORDS: West Africa, Kwa, Edo, Ghotuo, tone rules, tone features, contour tones

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9118

Elugbe, Benjamin (1973) A Comparative Edo Phonology. University of Ibadan, Nigeria.
NOTES: Prof. thesis submitted to the University of Ibadan.
ABSTRACT: Outline phonologies of eight Edo languages, including tone, are presented and reconstructions of earlier Edoforms proposed. Of particular interest are the analysis of the Egene (engenni) tone system which dispenses with the 'upstep' proposed by Thomas 1967, and the discussion of alternative analyses of Eheun as a two or three level system. Proto-Edo tones and tone-rules are, however, not reconstructed, although comparative wordlists are fully tone-marked.
KEYWORDS: tonal development, Kwa, West Africa, Ibilo, uhami, Eheun, Ukue, Okpamheri, downstep, Edo, Bini, Egene, urhobo, aoma auchi, avhianwu, Ghotuo, iyekhee, intonation and tone

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9119
Erickson, Donna (1974) "Fundamental Frequency Contours of the Tones of Standard Thai" Pasaa, Bangkok. 4.1, pp. 1-24
ABSTRACT: The shapes of the fundamental frequency contours of the five tones of standard Thai in utterance final position are presented and they agree quite closely with those described by Abramson 1962. Some discrepancies which occur are accounted
for in light of the fact that fundamental frequency contours are sensit ive to consonants and vowels in the syllable. In particular, the initial consonant often has a pronounced effect on the initial shape of a contour underlying a phonemic tone.
KEYWORDS: instrumental study of tone, level tones, contour tones, consonant types and tone, Siamese, Tai, Southeast Asia

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9120
Ewan, William (1974) "Larynx Height in Running Speech" Phonology Laboratory, University of California, Berkeley.
ABSTRACT: Reports on a study of two subjects. Unfortunately very unnatural sentence types were used. Conclusions are 1. There is evidence for larynx displacement differences between stop types; 2. Larynx height and pitch are correlated in running speech; 3. Correlat ion may be Narrower for tone languages; 4. And may differ depending on w hether pitch is rising or falling. Although only one of the subjects showed 1. Above, Ewan concludes that larynx height may be a good indicator of some causes of tonogenesis.
KEYWORDS: physiology, larynx, pitch control, tonogenesis, consonant types and tone

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9121
Faaborg-Anderson, K. (1965) Electromyography of Laryngeal Muscles in Humans. Karger, New York.
KEYWORDS: physiology, electromyography, larynx, muscles

9122
Faaborg-Andersen, K. and A. Sonninen (1960) "Function of the Extrinsic Laryngeal Muscles at Different Pitch" Acta Otolaryngologica. 51.1-2, pp. 89-93
ABSTRACT: 13 subjects (7m 6f) sang at different pitches while x-ray stills were taken and muscle activity was recorded from electrodes in the sterno-thyroid, thyro-hyoid and mylo-hyoid muscles. The x-rays showed the larynx higher for moderately high pitch than for either low pitch or highest pitch. Low larynx position correlates with high sterno-thyroid activity. Higher pitches show high thyro-hyoid activity but mylo-hyoid activity was only high with a moderately high pitch. No interpretation of these results is offered.
KEYWORDS: pitch control, muscles, larynx, physiology

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9123
Fairbanks, Grant (1940) "Recent Experimental Investigations of Vocal Pitch in Speech" Journal of the Acoustical Society of America. 11.4, pp. 457-466
ABSTRACT: Reports on experiments dealing with (a) pitch characteristics of the voice during simulation of specific emotional states, (b) the relationship between the fundamental vocal pitches used in speech and the range of pitches which the larynx is capable of producing, (c) pitch variability in speech and (d) the phenomenon of voice change in the adolescent male.
KEYWORDS: emotion and pitch, tessitura, intonation

9124
Fernandez De Miranda, Maria (1959) Fonemica Del Ixcateco. Instituto Nacional De Antropologia E Historia, Mexico City. 21 pp.
NOTES: Publication 3 of the Direccion de Investigaciones Antropologicas
Abstracted by Bright, William. IJAL 27.3: 251. 1961.
ABSTRACT: Describes the phonology of Ixcatec (spoken in Oaxaca, Mexico) including Spanish loanwords. Basic tones are high, low and mid. In addition a 'half-high' toneme of limited distribution occurs, sometimes interchangeably with high. The
distribution of phonemes is in terms of a syllable which contains one or two vowels, which may have different tones, preceded by one to five consonants.
KEYWORDS: tone distribution, Ixcatec, Popolocan, Otomanguean, Central America

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9125
Fintoft, K. (1965) "Some Remarks on Word Accents" Phonetica. 13.4, pp. 201-226
ABSTRACT: The acoustical parameters correlated with the distinction between word accents in East Norwegian are investigated. It is found that the fundamental frequency differencealone is sufficient for a satisfactory accent impression.
KEYWORDS: Norwegian, acoustics, Germanic, Europe, pitch accent

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9126
Firth, J. R. (1933) "Notes on the Transcription of Burmese" Bulletin of the School of Oriental Studies, London. 7.1, pp. 137-140
ABSTRACT: A broad phonetic transcription for Burmese is proposed. Tone marks, for instance, are reduced from eleven to two.
KEYWORDS: Southeast Asia, Tibeto-Burman, Burmese, transcription, Lolo-Burmese

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9127

Firth, J. R. and B. B. Rogers (1937) "The Structure of the Chinese Monosyllable in a Hunanese Dialect (Changsha)" Bulletin of the School of Oriental Studies, London. 8.4, pp. 1055-1074
ABSTRACT: This paper presents a detailed Firthian prosodic analysis of the distribution of consonants, vowels, and tones in single syllables for Hunan Chinese. It includes a description of concomitant phonetic features of vowels on each of the five tones.
KEYWORDS: vowel length and tone, domain of tone, Sinitic, Hunanese Changsha

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9128

Fisher, William (1970) "A Study in the Reconstruction of Proto-Yucatec" Papers from the 6th Regional Meeting, Chicago Linguistic Society. 6, pp. 14-19
ABSTRACT: Proto-Yucatec is reconstructed as having had three level tones and contrastive vowel length and glottalization on the basis of correspondences between Yucatec and Mopan.
KEYWORDS: Yucatec, mayan, Central America, Mopan, tonal development

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9129

Flanagan, James and Michael Saslow (1958) "Pitch Discrimination for Synthetic Vowels" Journal of the Acoustical Society of America. 30.5 pp. 435-442
ABSTRACT: A psychoacoustic experiment to determine the just-discriminable changes in the fundamental frequency of synthetic vowels is described. The experimental parameters investigated are several combinations of four vowels, three sound pressure levels, and two fundamental frequencies. The results indicate that the just-discriminable changes in fundamental frequency are of the order of 0.3 to 0.5 hz.
KEYWORDS: acoustics, tone perception

9130

Ford, Kevin (1972) "The Non-terracing Tone System of Lolobi" University of Ghana, Legon.
ABSTRACT: Three classes of nouns are required to describe tone processes in Lolobi
(spoken in Ghana). Two can be defined by rather arbitrary listings of tone patterns, the third consists of all nouns ending in a simple low tone and these take little part in tone changes. Most tone changes involve raising low or mid to high, or low to mid or lowering high to mid. Many other aspects of the syntax of the language are also involved

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in the tone change rules. Interesting conditions on tones subsequent to changed tones are required to describe these processes.
KEYWORDS: morphotonology, syntactic structure and tone, tone rules Lolobi-Akpafu, Togo Remnant, Kwa, West Africa

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9131

Frantz, Chester and Marjorie Frantz (1966) "Gadsup Phoneme and Toneme Units" Linguistic Circle of Canberra Publications, Series A. 7, pp. 1-11
NOTES: Papers in New Guinea Linguistics No. 5. Reprinted in the Languages of the Eastern Family of the East New Guinea Highland Stock (McKaughan, Howard, ed.), pp. 406-413.
ABSTRACT: Gadsup (spoken in the eastern highlands of New Guinea) is a tone language which is used as the basis of "whistle talk" by its speakers. Four tones (high, low, up-glide and down-glide) are proposed. The glides are regarded as units because they contrast with high-low and low-high sequences and occur on all single vowels, and the starting point of glides is conditioned by the preceding tone in a manner not paralleled by sequences of high and low tones. Also, the up-glide has a mid-level allotone between two high tones. However the glides are restricted in occurrence being very rare on verbs and on nouns confined largely to final syllables. Verb tones are only perturbed by affixation where as noun tones are also perturbed by compounding.
KEYWORDS: whistle speech, contour tones, techniques for tonal analysis, tone distribution, Gadsup, New Guinea, East New Guinea Highland Stock

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9132

Frantz, Donald (1972) "The Origin of Cheyenne Pitch Accent" IJAL. 38.4, pp. 223-225
ABSTRACT: Frantz points out that the "relatively high pitch" of syllables with pitch accent or high tone in Cheyenne can in some cases be assigned by rules that capture alternations, but in other cases an inherent accent must be assigned to a vowel. Frantz cites Proto-Algonquian reconstructions, mainly from Bloomfield, to show that the inherent accent is a reflex of Proto-Algonquian long vowels.
KEYWORDS: pitch accent, vowel length and tone, tonogenesis, Cheyenne, North America, Algonquian

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9133

Fresco, Edward (1969) "The Tones of the Yoruba and Igala Disyllabic Noun Prefix" Journal of West African Languages. 6.1 pp. 31-34

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ABSTRACT: In Yoruba, noun prefixes may be only mid or low toned, where as in Igala noun prefixes may be only high or low. In this case Fresco shows that Yoruba mid tone corresponds to Igala high tone.
KEYWORDS: Yoruba, Igala, Yoruba, Kwa, West Africa, tone correspondences

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9134
Fromkin, Victoria (1972) "Tone Features and Tone Rules" Studies in African Linguistics. 3.1, pp. 47-76
ABSTRACT: In this paper Fromkin attempts to show that (a) The feature [stiff vocal cords] and [slack vocal cords] for both tones on vowels and glottal states for consonants are inadequate (b) 3 features for tones high , low and mid are the best yet proposed (c) A feature contour is necessary for descriptively adequate phonetic representations (d) inclusion of suprasegmental matrices for tonal specification in surface structure does not resolve the problem of contour tones on one segment. Evidence is cited from the following languages: Tigong, Ndoro, Akan, Mende, Nupe, Yala, and Yoruba.
KEYWORDS: tone features, tone rules, contour tones, suprasegmental matrix, Benue-Congo, Kwa, Mande, Akan, Nupe West Africa, Bantoid, Ndoro, 'Tigong', Mende, Yala, Yoruba

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9135
Fry, Dennis (1968) "Prosodic Phenomena" Manual of Phonetics. Malmberg, Bertil (ed.) North-Holland Publishing Co. Amsterdam. pp. 365-410
ABSTRACT: This paper deals with the realization of prosodic aspects of language (including tone) in speech, particularly the relations between physical properties of the speech sound-waves and the linguistic and psychological consequences of prosodic features.
KEYWORDS: intonation, intonation and tone, instrumental study of tone, tone perception, domain of tone, psychological reality acoustics

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9136
Gandour, Jack (1974) "Glottal Stop in Siamese: Predictability in Phonological Description" Working Papers in Phonetics, University of California, Los Angeles. 27, pp. 84-91
ABSTRACT: Shows that the glottal stop, although predictable, must be present in underlying forms in order to capture certain linguistically significant generalizations. Arguments include reference to distribution of tone and syllable structures.

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KEYWORDS: Southeast Asia, Siamese, Tai, syllables, tone distribution

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9137

Gandour, Jack (1974) "Consonant Types and Tone in Siamese" Working Papers in Phonetics, University of California, Los Angeles. 27 pp. 92-117

ABSTRACT: Results of investigations of effects of preceding consonants on tone in Siamese show that (a) The consonantally-perturbed portion of a tone restricted to the initial part and its duration is determined by preceding consonant type, (b) voiceless consonants show a relatively high-falling contour in transition to the following vowel, voiced consonants a relatively low-rising-falling contour in transition to the following vowel, (c) aspirated stops exhibit 2 allophones - one plain, the other breathy conditioned by initial pitch height on the following vowel. Theoretical implications for tone in a generative phonology are discussed.

KEYWORDS: Southeast Asia, Tai, Siamese, acoustics, instrumental study of tone, consonant types and tone

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9138

Gandour, Jack (1974) "On the Representation of Tone in Siamese" Working Papers in Phonetics, University of California, Los Angeles. 27, pp. 118-146

ABSTRACT: Based on acoustical investigations of the phonetic shapes of contour tones in fast casual speech, this paper shows that earlier arguments for segmental representation of tone in Siamese that de alt with simplification of contour tones in fast speech cannot be maintained. Other arguments are given, however, for representing tone segmentally in Siamese as well as representing contour tones as sequences of level tones.

KEYWORDS: Southeast Asia, Tai, Siamese, tone features, tone sandhi, tone rules, instrumental study of tone, acoustics segmental tone, suprasegmental tone, syllables, consonant types and tone, level tones, contour tones

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9139

Gandour, Jack (1974) "The Features of the Larynx: N-ary or Binary?" Working Papers in Phonetics, University of California, Los Angeles. 27, pp. 147-159

ABSTRACT: Based on evidence concerning historical development of tone in the Tai language family, paper attempts to show that the underlying principle governing the tone splits requires the postulation of a multivalued classificatory feature [glottal

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width] - that consists of a linearly ordered set of states of glottal aperture - spread, voiceless, tightened, and closed. A new binary feature [vibrating] is also proposed.
KEYWORDS: Southeast Asia, Tai, tonal development, consonant types and tone, tone splitting, larynx

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9140

Garding, Eva (1973) "The Scandanavian Word Accents" Working Papers, Phonetics Laboratory, Lund University. 8, pp. 1-119
ABSTRACT: Section 1 provides a historical review of the chief topics of accent research. Section 2 gives a summary of the rules that assign the correct accent to a given word. Section 3 deals with the phonetic manifestations of the accents and leads up to a tentative typology for the dialects. Perceptual and physiological aspects are treeated in sections 4 and 5. In section 6, some models that describe the dialectal variation and the interplay between accents and sentence intonation are presented. The final section contains a number of speculations about the origin of the accents. An extensive bibliography of over 200 entries is appended.
KEYWORDS: Germanic, Norwegian, Swedish, Danish, accent, tone perception, whispered speech, tonogenesis, Europe, intonation and tone, physiology, stress and tone, pitch accent

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9141

Garding, Eva, Osamu Fujimura, and Hajime Hirose, (1970) "Laryngeal Control of Swedish Word Tones" Annual Bulletin of the Research Institute of Logopedics and Phoniatrics, Tokyo. 4, pp. 45-54
ABSTRACT: EMG of two subjects. The cricothryoid muscle shows a clear and consistent correlation with pitch. Corresponding to the glottal adjustment for [h] ("glottal fricative") there seems to be a trading relation between vocalis and cricothyroid activity.
KEYWORDS: larynx, physiology, pitch accent, pitch control, Swedish, Europe, Germanic, muscles

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9142

Gedney, William (1947) "Indic Loanwords in Spoken Thai" Ph.D. Dissertation, Yale University.
ABSTRACT: This dissertation includes a brief description of the tonal structure of modern Siamese, pp. 23-26, and information on the tonal patterns of loanwords including restrictions on sequences of tones and correlations of Indic consonants with tones.
KEYWORDS: Southeast Asia, Tai, Siamese, loanwords,

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consonant types and tone

9143

Gedney, William (1964) "A Comparative Sketch of White, Black, and Red Tai" Social Science Review (Special Number). pp. 1-47
ABSTRACT: This paper includes a discussion on the distribution of tones and initial consonants on pp. 5-27 in 3 Tai dialects - White Tai, Black Tai, and Red Tai.
KEYWORDS: Southeast Asia, Tai, White Tai, Black Tai, Red Tai, tonal development, consonant types and tone

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9144

Gedney, William (1967) "Future Directions in Comparative Tai Linguistics" University of Michigan Press, Ann Arbor.
NOTES: Revised and expanded version of a paper presented at the University of Washington and the University of California, Berkeley.
ABSTRACT: This article includes a discussion of the phonological structure and the
relationship between initial consonants and the development of tone in Tai languages. Gedney further considers a number of 'live' issues such as: can the 4 categories of phonetic types of initial consonants that are assumed to have conditioned tonal splits be further subdivided? Is there a systematic phonological explanation for tonal irregularities in languages of the Northern Tai branch pp. 35-55?
KEYWORDS: Southeast Asia, Tai, tonal development, consonant types and tone

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9145

Gedney, William (1973) "A Checklist for Determining Tones in Tai Dialects" Studies in Linguistics in Honor of George L. Trager Smith, M. Estellie (ed.) Mouton, the Hague. pp. 423-437
ABSTRACT: Based on years of experience with Tai languages, Gedney surveys the most
salient phonological properties of Tai languages, reviews currently held views on comparative Tai phonology, and furnishes an invaluable technique for investigating the tonal structure of Tai dialects.
KEYWORDS: , Southeast Asia, elicitation of tone, Tai, tonal development, Siamese, tone correspondences, consonant types and tone

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9146

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Gedney, William (1970) "The Saek Language of Nakhon Pha nom Province" Journal of the Siam Society. 58.1, pp. 67-87
ABSTRACT: This article includes a brief description of the Saek tone system. See pp. 72-73.
KEYWORDS: Southeast Asia, Tai, Saek, Northern Tai, tonal development, consonant types and tone, Siamese

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9147

Gedney, William (1970) "A Spectrum of Phonological Features in Tai",
NOTES: Paper presented at the 3rd Annual Meeting of the Conference on Sino-Tibetan Reconstruction at Cornell University; Oct. 9-10, 1970.
ABSTRACT: To account for the various types of tonal splits and their conditioning factors in the initial consonants in languages and dialects of the Tai family, Gedney proposes the following fixed order of initial-consonant classes: 1. Voiceless friction consonants 2. Voiceless unaspirated stops 3. Glottal stop and preglottalized consonants 4. Voiced consonants. This ordering principle predicts that only adjacent classes of initial consonants may produce the same tone.
KEYWORDS: Southeast Asia, Tai, Siamese, tonal development, consonant types and tone, White Tai, Lung Ming, Nung, Saek

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9148

Gedney, William (1973) "Notes on the Tai Dialect of Ning Ming: Part One" University of Michigan Press, Ann Arbor.
NOTES: Paper presented at the 6th International Conference on Sino-Tibetan Languages and Linguistics, San Diego.
ABSTRACT: This paper includes a description of the tones of the Tai dialect spoken,
at Ning Ming in southwestern KWangsi province, China. Special attention is given to features of the sound system relevant to historical-comparative Tai Linguistics.
KEYWORDS: Tai, Ning Ming, tonal development, tone correspondences, consonant types and tone, China

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9149

George, Isaac (1970) "Nupe Tonology" Studies in African Linguistics. 1.1, pp. 100-122
ABSTRACT: Nupe has 6 tones that occur phonetically: 4 level tones high, mid, low, and raised low; 2 contour tones rising and falling. Only 3 tones, however, are posited as underlying - high, mid, and low. It is demonstrated that the remaining level tone raised low and the 2 contour tones can be derived by phonological rule. Phonological rules that include syntactic information in

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their structural descriptions and rules that delete segmental features of vowels without also deleting the tonal features are utilized. It is further suggested that nonsegmental tone-bearing units be permitted in the underlying lexical representations.
KEYWORDS: Kwa, West Africa, Nupe, contour tones, tone rules floating tones, consonant types and tone

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9150

Gerhardt, Ludwig (1968) "Analytische Und Vergleichende Untersuchungen Zu Einigen Zentral Nigerianischen Klassensprachen" Afrika Und Ubersee. 51.3, pp. 161-198
ABSTRACT: Describes the phonology (assuming three tone levels) and morphology of Kagoro.
KEYWORDS: Plateau, West Africa, Kagoro, Benue-Congo

9151

Gerhardt, Ludwig (1968) "Analytische Und Vergleichende Untersuchungen Zu Einigen Zentral Nigerianischen Klassensprachen" Afrika Und Ubersee. 52.2, pp. 125-143
ABSTRACT: Describes the phonology (recognizing three level tones and a rise and a fall) and morphology of Irigwe and includes a tone-marked wordlist.
KEYWORDS: morphotonology, Irigwe, Plateau, Benue-Congo, West Africa

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9152

Gibson, Lorna (1956) "Pame (Otomi) Phonemics and Morphophonemics" IJAL. 22.4, pp. 242-265
ABSTRACT: Three suprasegmenal phonemes of tone-stress - high, low, falling - are assigned to the word in Pame (Otomi). Eleven main tone patterns for the word are recognized. Also included is a description of tone-stress allophones.
KEYWORDS: North America, Otomi, stress, vowel length and tone, tone rules, contour tones, domain of tone, Pame, Otomanguean

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9153

Gill, Harjeet Singh (1960) "Panjabi Tonemics" Anthropological Linguistics. 2.6, pp. 11-18
ABSTRACT: Three contrastive tonal contours are set up for citation forms in Panjabi - low (low onset followed by a higher pitch rising to mid level), mid (mid level pitch followed by a higher pitch), high (rising onset followed by the same pitch). Also described are variations in tonal contours conditioned by

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adjacent tonal contours, intonational pitches, and terminal contours.
KEYWORDS: Punjabi, tone sandhi, intonation and tone, Indian Subcontinent, Indo-Iranian

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9154
Gill, Harjeet Singh and Henry Gleason (1963) A Reference Grammar of Panjabi. Hartford Seminary Foundation, Connecticut.
NOTES: Hartford Studies in Linguistics, No. 3.
ABSTRACT: Chapter 3 is on tone and intonation. Three tone levels are recognized and ascribed to the word but tone placement is described as contrastive. Chapter 4 on orthography describes the way that tonal values are represented in the Gurmukhi script and discusses the evidence this provides for the origin of tonal contrasts in consontal distinctions. In general, low tone developed following breathy 'voiced aspirates', high tone developed preceding them, and mid tone elsewhere.
KEYWORDS: Punjabi, Indian Subcontinent, Indo-Iranian, tonal development, consonant types and tone, tonogenesis, orthography

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9155
Gleason, Henry (1961) Introduction to Descriptive Linguistics. Holt, Rinehart, and Winston, New York. 503 pp.
ABSTRACT: This general textbook includes various sections on tone. The distribution of contour tones and vowel length is discussed briefly. In Loma the rising and falling tones are said to occur only on long vowels or diphthongs. Some useful techniques for analyzing tone are illustrated with Ewe data. Ewe is analyzed as having 3 phonemic tones, high, mid, and low. It is suggested that contour tones be analyzed as sequences of level tones. See pp. 300-306.
KEYWORDS: Kwa, Mande, Ewe, Loma, West Africa, long vowels, contour tones, techniques for tonal analysis

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9156
Goddard, Pliny Earle (1920) "Pitch Accent in Hupa" University of California Publications in Anthropology Archaeology and Ethnology. 23, pp. 333-338
KEYWORDS: pitch accent, Hupa, Athapaskan, North America

9157
Goldman, g. R. Goss, and E. Shaw (1971) "Notes on the Tones of North Vietnamese" Linguistic Communications, Monash University. 3 pp. 9-21

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ABSTRACT: Auditory, articulatory and acoustic description of the tones of North Vietnamese (Hanoi).
KEYWORDS: Southeast Asia, Viet, Vietnamese, instrumental study of tone, acoustics

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9158
Gordon, Raymond (1972) "Pitch Accent in Crow" IJAL. 38.3, pp. 191-200
ABSTRACT: Crow, spoken in southern Montana, has 3 tones phonetically: 2 level (high and low), and 1 contour (falling). Their distribution depends on vowel length and position with respect to the stressed syllable in the form. Gordon accounts for this distribution at higher phonological levels - verb phrase and noun phrase. His analysis makes use of: syntactic constituent structure, cyclical application of phonological rules, absolute neutralization, phonological use of diacritic features [fixed] and [strong], diacritic use of phonological feature [accent], long vowels, vowel strengthening rules - all without considering any alternative analyses.
KEYWORDS: North America, Siouan, Crow, absolute neutralization, diacritic features, cyclic rules, stress, pitch accent, tone rules

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9159
Green, M. M. (1949) "The Classification of West African Tone Languages: Igbo and Efik" Africa. 19.3, pp. 213-219
ABSTRACT: Green discusses the similarities between Igbo and Efik tone systems which both have two-level tone systems and a morphological use of tone. Specific similarities (e.g. Nouns in juxtaposition or in qualfying or genitival relationship change their inherent tone pattern in two ways according to whether the qualifying word is or is not personal) suggest that Igbo is closer to Efik than to Yoruba which has three tone levels and little use of morphological tone.
KEYWORDS: tone typology, West Africa, Efik-Ibibio, Igbo, Cross River, Lower Niger, Kwa

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9160
Greenberg, Joseph, (1948) "The Tonal Syses of Proto-Bantu" Word. 4.3, pp. 196-208
ABSTRACT: Proposes a 2-level tonal system for Proto-Bantu. Extensive list of cognate forms is appended.
KEYWORDS: tonal development, tone correspondences, Narrow Bantu, Benue-Congo, East Africa, Central Africa, southern Africa

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9161

Grimes, Joseph (1959) "Huichol Tone and Intonation" IJAL. 25.4 pp. 221-232
ABSTRACT: Noting that most published descriptions of Uto-Aztecan languages had been silent or ambiguous on the function of pitch, Grimes offers a description of Huichol (Mexico) that concludes that pitch differences in the pre-contour portion of the intonational phrase are due to lexical tone contrasts of two level tones. Intonation contours are described with four pitches.
KEYWORDS: intonation and tone, elicitation of tone, stress and tone, Huichol, Uto-Aztecan, North America

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9162

Grinaveckis, Vladas (1964) Istoricheskoe Razvitie Udarenija Intonacij Zemaitskix Govorov Litovskogo Jazyka (V Sravnenii C Latyshskim) Moscow 104 pp.
ABSTRACT: Historical development of tonal systems in Lithuanian dialects compared with Latvian. Some discussion of gradation of dialects in respect to pitch exponents which provides evidence for reconstruction and for the gradual nature of sound-change.
KEYWORDS: Latvian, Lithuanian, tonal development, Baltic, Europe, pitch accent, nature of sound change

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9163

Grinaveckis, Vladas (1973), Zemaiciu Tarmiu Istorija (Fonetika). Mintis, Vilnius. 370 pp.
ABSTRACT: Contains on pp. 39-127 both diachronic and synchronic descriptions of tone in the Zhemaitian dialects of Lithuanian. Data from these dialects is compared wih Latvian. The question of tonogenesis is considered in some detail.
KEYWORDS: Baltic, Europe, Lithuanian, Zhemaitian, tonogenesis, tonal development, stress and tone, pitch accent, Latvian

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9164

Gruber, Jeffrey (1964) "The Distinctive Features of Tone" Massachusetts Institute of Technology, Cambridge.
ABSTRACT: Gruber proposes two tone features high and 2nd high which permit four level tones to be distinguished. Discussion is mainly illustrated from Chinese dialects.
KEYWORDS: tone features, China, Sinitic, level tones,

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9165
Gudschinsky, Sarah (1958) "Native Reactions to Tones and Words in Mazatec" Word. 14.2-3, pp. 338-345
ABSTRACT: Gudschinsky's experience in literacy work with speakers of Soyaltepec Mazatec suggests that native re actions to speech can be partly dependent on the level of linguistic sophistication and partly on the focus of attention. As for the second of these, phonemic writing of tone on the phonological word (showing internal sandhi) was easier for readers dealing with isolated words, but a morphophonemic writing of tones (excluding external sandhi) was easier for reading phrases. The evidence this provides for the psychological reality of the phonological word is considered.
KEYWORDS: psychological reality, Mazatec, Mazatecan, Otomanguean, Central America, orthography, tone sandhi

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9166
Guthrie, Malcolm (1940), "Tone Ranges in a Two-tone Language (Lingala)" Bulletin of the School of Oriental and African Studies, London. 10.2
ABSTRACT: Lingala is analyzed as having 2 distinctive level tones - high and mid, while further phonetic distinctions between pitch levels are characterized as due to 'toneslip', an automatic lowering process which is non-contrastive.
KEYWORDS: Ngala, intonation and tone, Ngombe, Narrow Bantu, Benue-Congo, Central Africa, downdrift

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9167
Haas, Mary (1946) "Techniques of Intensifying in Thai" Word. 2 pp. 125-130
ABSTRACT: One common technique for intensifying the meaning of 'descriptive verbs'
in Thai involves reduplicating the 'descriptive verb' and changing the tone on the first 'descriptive verb' in reduplication to a so-called 'emphatic high tone'. This 'emphatic high tone' is never used to contrast lexical items; it only occurs with intensive reduplications, exclamations, and the like. On the basis of phonetic similarity and standard Thai orthography, Haas suggests that it be analyzed as an allotone of the 'high tone' phoneme.
KEYWORDS: Southeast Asia, Tai, Siamese, tone rules, reduplication

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9168
Haas, Mary (1958) "The Tones of Four Tai Dialects" Bulletin of the Institute of History and Philology, Academia Sinica. 29, pp. 817-826

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ABSTRACT: Haas compares the historical development of tone in four modern Thai dialects - Bangkok, Nakhonsithamarat, Chiengmai, and Roi-et. Assuming 4 tonal categories in Proto-Tai, she notes that tonal development in each category is conditioned by the voice quality of the initial consonant.
KEYWORDS: Southeast Asia, Tai, tonal development, Siamese, Nakhonsithamarat, Chiengmai, roi-et, consonant types and tone

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9169

Haas, Mary (et al.) (1964) Thai-English Student's Dictionary. Stanford University Press. 638 pp.
ABSTRACT: This dictionary provides a convenient reference work for the English-speaking student of Thai. Each entry is given in the traditional Thai spelling and a phonemic transcription. A brief description of the tones is included in the preface.
KEYWORDS: Southeast Asia, Siamese

9170

Haas, Mary (1969) "Burmese Disguised Speech" Bulletin of the Institute of History and Philology, Academia Sinica. 39.2, pp. 277-285
ABSTRACT: Word games which consist of switching syllables are shown to reflect phonological structure of Burmese. Implications for rule ordering hypotheses are discussed.
KEYWORDS: Tibeto-Burman, Burmese, language games, rule ordering, extrinsic order, Siamese, Tai, Lolo-Burmese, Southeast Asia

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9171

Hadding-koch, Kerstin (1961) Acoustic-phonetic Studies in the Intonation of Southern Swedish. Gleerup, Lund. 211 pp.
KEYWORDS: Swedish, Germanic, intonation and tone, acoustics Europe, pitch accent

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9172

Haddock, N. L. (1959) "The Tones of Bariba" Phonetica. 3, pp. 90-94
KEYWORDS: Bariba, Voltaic, West Africa, level tones

9173

Hale, Austin (1970) "Newari Higher Levels" Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics. 3.1, pp.

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158-206
KEYWORDS: Tibeto-Burman, domain of tone, stress and tone, consonant types and tone, syllables, syntactic structure and tone, tone distribution, Bodic, Indian Subcontinent

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9174

Hale, Austin and Warren Glover (1970) "A Note on Glides, Syllabicity and Tone in Gurung" Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics. 3.1, pp. 49-73
KEYWORDS: Tibeto-Burman, Gurung, intonation and tone, consonant types and tone, domain of tone, tone distribution, Bodic, Indian Subcontinent

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9175

Hale, Austin and Kenneth Pike (eds.) (1970) Tone Systems of Tibeto-Burman Languages of Nepal. Department of Linguistics, University of Illinois, Urbana. 380 pp.
NOTES: Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics 3.1 Studies on Tone and Phonological Segments, 3.2 Lexical Lists and Comparative Studies.
KEYWORDS: Bodic, Tibeto-Burman, Gurung, Tamang, Thakali, Chepang, Newari, Sunwar, Sherpa, tonal development, phonation type and tone, Indian Subcontinent

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9176

Halle, Morris (1972) "Theoretical Issues in Phonology in the 1970'S" Proceedings of the 3rd International Congress of Phonetic Sciences. Rigault, Andre and Rene Charbonneau (eds.) Mouton, the Hague. pp. 179-205
ABSTRACT: In this paper Halle suggests 1. Universal phonetic framework must provide for a distinction of at least 3 pitch levels, high, mid, and low 2. Pitch level distinctions in vowels and voicing distinctions in obstruents are controlled by the same pair of features stiff and slack vocal cords 3. All tones are stationary on the systematic phonemic level; tone is suprasegmental on the systematic phonemic level. Following Leben 1971 Halle proposes that linguistic theory include a suprasegmental matrix in addition to segmental matrix and a set of rules to map sequences of tones in suprasegmental matrix onto sequences of segments in segmental matrix (he mentions one-one, many-one, many-many mapping relations but no tone-many). The set of rules may operate at different points in the grammar, depending on the particular language; rules operate early in Otomi, Northern Tepehuan, and Serbo-Croation, late in Mende. Halle does not formalize this proposal, however. Finally, he concludes that there is probably

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no sharp dividing line between segmental and suprasegmental features; at least some features can function both segmentally and suprasegmentally.
KEYWORDS: tone features, physiology, tonal development, suprasegmental matrix, consonant types and tone, contour tones, Mende, Mande, West Africa

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9177
Halle, Morris and Kenneth Stevens (1971) "A Note on Laryngeal Features" Quarterly Progress Report, Research Laboratory of Electronics, Massachusetts Institute of Technology. 101, pp. 198-213
ABSTRACT: This article proposes two paired sets of binary features to account for laryngeal activity. Vocal cord tension, represented by values for the features [stiff] and [slack], is said to account for voicing distinctions in consonants and pitch distinctions in vowels. Glottal width, represented by the features [constricted] and [spread], accounts for remaining phonation types (murmur, aspiration, etc.).
KEYWORDS: tone features, larynx, consonant types and tone, tonal development, tone splitting

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9178
Hari, Maria (1970) "Thakali Tone and Higher Levels" Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics. 3.1 pp. 125-142
KEYWORDS: Tibeto-Burman, syllables, domain of tone, Thakali, tone distribution, Bodic, Indian Subcontinent

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9179
Hari, Maria, Doreen Taylor, and Kenneth Pike (1970) "Tamang Tone and Higher Levels" Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics. 3.1, pp. 82-124
KEYWORDS: Tibeto-Burman, Tamang, domain of tone, intonation and tone, syntactic structure and tone, consonant types and tone syllables, tone distribution, Bodic, Indian Subcontinent

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9180
Harris, Jimmy and Richard Noss (eds.) (1972) Tai Phonetics and Phonology. Central Institute of English Language, Bangkok. 148 pp.
NOTES: This volume contains mostly papers presented at the Conference on Tai phonetics and phonology, Central Institute of

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English Language, Bangkok, May 1971.
ABSTRACT: This collection of papers includes several that are important for those interested in tonal development in the Tai language family.
KEYWORDS: Southeast Asia, Tai, tonal development, consonant types and tone, stress

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9181

Hartman, Lawton (1944) "The Segmental Phonemes of the Peiping Dialect" Language. 20.1, pp. 28-42
ABSTRACT: This paper principally deals with problems of segmental phonology in Peking Chinese. Of particular interest is the fact that phonetic realizations of the 2 vowels i and e are conditioned by tone - one allophone ocurring on the first (high level) and second (high rising) tones, the other allophone occurring on the third (low falling) and fourth (high falling) tones.
KEYWORDS: China, Sinitic, Pekinese, stress, vowel height and tone, Mandarin

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9182

Haudricourt, Andre-Georges (1954) "De L'origine Des Tons En Vietnamien" Journal Asiatique. 24.1, pp. 69-82
ABSTRACT: Haudricourt evaluates comparative evidence for the origin of tones in Vietnamese and concludes that the combinations of final fricative, glottalization or zero with a voiced/voiceless initial contrast gave rise to the six contrasting tones of modern Vietnamese.
KEYWORDS: tonal development, tone splitting, Viet, Vietnamese, Southeast Asia, consonant types and tone

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9183

Haudricourt, Andre-Georges, (1961) "Bipartition et Tripartition Des Systemes De Tons Dans Quelques Langues d'Extreme-Orient" Bulletin De La Societe De Linguistique De Paris. 56, pp. 163-180
NOTES: Translation by Christopher Court, "Two-way and Three-way Splitting of Tonal Systems in Some Far Eastern Languages", in Tai Phonetics and Phonology.
ABSTRACT: See entry for translation.
KEYWORDS: China, Southeast Asia, Tai, Sinitic, Miao-Yao, Viet, Kam-Sui, Cham, tonal development, consonant types and tone

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9184

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(1968) "La Langue De Gomen et La Langue De Touho En Nouvelle Caledonie" Bulletin De La Societe De Linguistique De Paris. 63.1 pp. 218-235
ABSTRACT: A major part of this paper compares the tonal languages Touho and Paaci, with the related languages Kone and Pindje, which are non-tonal. The non-tonal languages have more extensive consonant inventories where as the tonal languages appear to have depleted this and replaced it with word-tone. Words with high tone correspond to words with initial voiceless fricatives or aspirated stops or voiceless (aspirated) nasals in the non tonal languages. Words with mid tone correspond to words with initial voiceless unaspirated stops, voiced nasals or prenasalized stops or voiced fricatives. The low tone words are in many cases like the mid-tone words in their correspondences.
KEYWORDS: consonant types and tone, Camuhi, tonal development Touho, Pindje, Kone, Paaci, Oceania, Austronesian

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9185
Haudricourt, Andre-Georges (1972) "Two-way and Three Way Splitting of Tonal Systems in Some Far Eastern Languages" Tai Phonetics and Phonology. Harris, Jimmy and Richard Noss (eds.) Central Institute of English Language, Bangkok. pp. 58-86
NOTES: Translation by Christopher Court of "Bipartition et Tripartition des Systemes de Tons"; Bulletin de la Societe de Linguistique de Paris 56. 163-80.
ABSTRACT: In this article Haudricourt surveys a number of languages of Asia that have undergone either 2-way or 3-way splits of their tonal systems brought about by the merger of initial consonants. In the case of 2-way splits, the merger of voiceless and voiced initial consonants. In the case of 3-way splits, the merger of glottalized, aspirated, and voiced initial consonants. Haudricourt's interpretation of the various tonal systems that result from the merger of initial consonants depends crucially on the Praguian concept of "neutralization". In those cases where some initial consonants were not involved in the merger, Haudricourt finds architonemes that are and are not phonetically distinct from tonemes produced by the split.
KEYWORDS: China, tonal development, Southeast Asia, Tai, Sinitic, Miao-Yao, Viet, tone splitting, Kam-Sui, Cham, consonant types and tone

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9186
Haugen, Einar and Martin Joos (1954) "Tone and Intonation in East Norwegian" Acta Philologica Scandinavia. 22.1, pp. 41-64
ABSTRACT: The authors present a combined phonetic and phonemic analysis of the function of pitch in Norwegian (standard colloquial Oslo). They eliminate the word as a unit of analysis

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in favor, of the "measure" (which contains 1 primary stress); this is subdivided into a "nucleus" (containing the tonal distinction) and a "contour". The nucleus is normally accompanied by low tone. The distinction between accent 1 and accent 2 is found in where this low tone occurs in relation to the stressed core of the syllable; accent 1 occurs if low tone occurs within the stressed core ("short nucleus") and accent 2 occurs if low to ne comes shortly after it ("long nucleus"). The authors briefly apply their analysis to utterances of other Norwegian dialects. The different "contours" (intonational, e. g. neutral, emphatic, expressive, etc.) Are also described.
KEYWORDS: Europe, Norwegian, intonation, stress and tone, accent, Germanic

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9187

Heeschen, Claus (1967) "Lithuanian Morphophonemics" Quarterly Progress Report, Research Laboratory of Electronics, Massachus etts Institute of Technology. 85
KEYWORDS: pitch accent, morphotonology, Lithuanian, Baltic, Europe

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9188,

Henderson, Eugenie (1948) "Notes on the Syllable Structure of Lushai" Bulletin of the School of Oriental and African Studies, London. 12.3-4, pp. 713-725
KEYWORDS: Lushai, Tibeto-Burman, syllables, Indian Subcontinent

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9189

Henderson, Eugenie (1949) "Prosodies in Siamese, a Study in Synthesis" Asia Major (New Series). 1, pp. 189-215
NOTES: Reprinted in Prosodic Analysis. F. R. Palmer (ed.). 1970. Oxford University Press. pp. 27-53.
ABSTRACT: Included in Henderson's treatment of Thai is discussion of the consonant
and vowel systems, the prosodic structure of monosyllables, onomatopoeic words, certain foreign words, compound words, polysyllabic words, and the sentence. Three speech styles are pos ited: 'isolative', 'combinative', and 'rapid combinative'. Certain prosodies are correlated with each style.
KEYWORDS: , Southeast Asia, Tai, Siamese, tone rules, intonation and tone, stress, loanwords

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9190

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Henderson, Eugenie (1952) "The Main Features of Cambodian Pronunciation" Bulletin of the School of Oriental and African Studies, London. 14.1, pp. 149-174
KEYWORDS: Southeast Asia, cambodian, Mon-Khmer, Khmer

9191

Henderson, Eugenie (1959) "The Tones of the Tai Dialect of Songkhla" Bulletin of the Institute of History and Philology, Academia Sinica. 30, pp. 233-235
ABSTRACT: The relationship between the syllable-initial conSongants and tones in the sonkhla dialect of southern Thailand is discussed. Based on their infLuence on the development of tones, 3 consonant classes are found in all tone categories. The songkhla tonal system is shown to be structurally identical to the one of the Nakhonsithamarat dialect
KEYWORDS: Southeast Asia, Tai, Nakhonsithamarat, songkhla, tonal development, consonant types and tone, Siamese

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9192

Henderson, Eugenie (1961) "Tonal Exponents of Pronominal Concord in Southern Vietnamese" Indian Linguistics. 22, pp. 86-97
ABSTRACT: In languages of the Sino-Tibetan family together with many neighbouring languages of Southeast Asia, tones are almost exclusively used lexically with no correlation with syntactic or morphological aspects of the language. Southern Vietnamese provides one of the unusual cases where tone is used to express a grammatical relationship, namely 'pronominal concord'. It is found that the breathy fall-rise tone in southern Vietnamese (Saigondialect) may be used anaphorically to refer back to some 'key' noun or nominal expression in what has gone before.
KEYWORDS: Southeast Asia, Vietnamese, Viet, syntactic structure and tone, morphotonology

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9193

Henderson, Eugenie (1964) "Marginalia to Siamese Phonetic Studies" In Honour of Daniel Jones. Abercrombie, David et al. (eds.) Longmans, London. pp. 415-424
ABSTRACT: Includes phonetic description of the mid tone and the high tone, and the
variations in breath force accompanying the five tones.
KEYWORDS: consonant types and tone, tonal development, level tones, contour tones, intensity and pitch, Tai, Southeast Asia Siamese

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9194
Henderson, Eugenie (1965) "The Topography of Certain Phonetic and Morphological Characteristics of
Southeast Asian Languages" Lingua. 15, pp. 400-434
ABSTRACT: Included in this typological study is the distribution over 59 languages
in the southeast Asian linguistic are a of the phonetic features of lexically contrastive pitch and phonation type. See pp. 408-413. Examples of languages that show morphological use of pitch, correlation of contrastive pitch and phonation type, coocurrence of
the correlation of contrastive pitch and phonation type and of the morphological use of pitch, and correlation of contrastive pitch and phonation type with initial and final consonants are cited.
KEYWORDS: Southeast Asia, syntactic structure and tone, consonant types and tone, morphotonology, tone typology

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9195
Henderson, Eugenie (ed.) (1971) The Indispensable Foundation, a Selection from the Writings of Henry Sweet. Oxford University Press, London. 329 pp.
ABSTRACT: Includes selections from Sweet's writings on pitch, tone, and intonation
on pp. 175-180.
KEYWORDS: intonation and tone, level tones, contour tones,

9196
Hinton, Bruce (1970) "Spectrographic Confirmation of Contrastive Pitch and Breathiness in Gurung" Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics. 3.1, pp. 74-81
KEYWORDS: Tibeto-Burman, Gurung, instrumental study of tone, acoustics, Indian Subcontinent, Bodic, phonation type and tone

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9197
Hiranburana, Samang (1971) "The Role of Accent in Thai Grammar" School of Oriental and African Studies, University of London.
ABSTRACT: This dissertation investigates the role of accent in colloquial standard
Thai within the theoretical framework of
generative-transformational grammar. It is hypothesized that accent in Thai can be predicted by phonological rule. Much discussion is also given to the phonetic realization of tones in fast casual speech.
KEYWORDS: syntactic structure and tone, tone sandhi, segmental tone, suprasegmental tone, domain of tone, tone

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features, tone rules, application of phonological rules, instrumental study of tone, acoustics, speech tempo, accent, stress, markedness conventions, vowel length and tone, contour tones, level tones

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9198

Hiranburana, Samang (1972) "changes in the Pitch Contours of Unaccented Syllables in Spoken Thai" Tai Phonetics and Phonology. Harris, Jimmy and Richard Noss (eds.) Central Institute of English Language, Bangkok. pp. 23-27
ABSTRACT: This paper is a summary of chapter 8 of Hiranburana's doctoral dissertation "The Role of Accent in Thai Grammar" 1971 in which she posits the phonological feature accent for Thai to predict pitch contours that occur on 'unaccented' syllables. She claims that only 3 stationary tones may occur on 'unaccented' syllables, namely, mid, modified low, and high.
KEYWORDS: , Southeast Asia, Tai, Siamese, stress, tone rules

9199

Hirano, Minoru, John Ohala, and William Vennard (1969) "The Function of Laryngeal Muscles in Regulating Fundamental Frequency and Intensity of Phonation" Journal of Speech and Hearing Research. 12, pp. 616-628
ABSTRACT: The activity of 3 intrisic laryngeal muscles in the regulation of fundamental frequency and intensity of phonation was studied electromyographically in six subjects. The regulatory mechanism of fundamental frequency and intensity differed for different registers and fundamental frequencies.
KEYWORDS: muscles, electromyography, pitch control, physiology, larynx

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9200

Hirose, Hajime and T. Gay (1972) "The Activity of the Intrinsic Laryngeal Muscles in Voicing Control: an, Electromyographic Study" Phonetica. 25.3, pp. 140-164
ABSTRACT: Investigation of actions of intrinsic muscles of the larynx during the production of voiced and voiceless consonants. Generally speaking, computer-averaged EMG curves for the laryngeal muscles showed participation of the posterior crico-arytenoid for voiceless consonants and suppression for voiced consonants. The reciprocal pattern was found for the interarytenoid muscle. Similar reciprocal patterns were evident along the timing dimension. These results are discussed in terms of recently proposed laryngeal feature systems.
KEYWORDS: muscles, electromyography, physiology, larynx,

consonant types and tone, tone features

9201
Hobley, June (1964) "A Preliminay Tonal Analysis of the Bassa Language" Journal of West African Languages. 1.2, pp. 51-56
ABSTRACT: The Bassa language of Liberia is analyzed as having three level tones with contours on short vowels being interpreted generally as sequences. However high and mid tonemes occur as low-high and low-mid glides after fortis consonants and low appears as mid-low glide after lenis consonants, where as a falling high-low glide,
can occur following both groups of consonants and is therefore assigned to a separate falling toneme.
KEYWORDS: Bassa (Kru), Kru, Kwa, West Africa, consonant types and tone, tone rules, level tones, contour tones

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9202
Hockett, Charles (1947) "Peiping Phonology" Journal of the American Oriental Society. 67.4, pp. 253-267
ABSTRACT: This paper presents a detailed discussion of the phonetics and phonology
of Peking Chinese within the framework of American structuralism. Hockett posits six phonemic tones.
KEYWORDS: China, Sinitic, Pekinese, stress, intonation and tone, Mandarin

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9203
Hodge, Carleton and Helen Hause (1944) "Hausa Tone" Journal of the American Oriental Society. 64, pp. 51-52
ABSTRACT: Hodge and hause claim that Hausa has two phonemic tones, high and low. In an utterance with anarrative contour there are five levels of pitch. Within a sin le utterance there may be several tone phrases each with its own tone phrase contour. In an utterance with a narrative contour the phonemic tone is governed by the following rules. First, in a series of two or more like tones, all tones remain on the phonetic level of the first like tone. Second, when a high tone follows an utterance initial low tone, it is realized phonetically as being four steps higher than the initial low tone. In all other cases the distance from a high to a following low tone is two steps, while the distance from low to a following high tone is one step. They do not define the term "step". They analyze Hausa falling tone as high followed by low "On the two moras of the vowel".
KEYWORDS: West Africa, Hausa, intonation and tone, contour tones, contour tones, downdrift, vowel length and tone, Chadic

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9204

Hoijer, Harry, (1943) "Pitch Accent in the Apachean Languages" Language. 19.1, pp. 38-41
ABSTRACT: Four phonemic tones are posited for the Apachean languages: high, low, rising, and falling. The contour tones occur only on morphologically complex syllables having a long vowel or vowel cluster. Two morpheme classes are set up: those morphemes that are
specified in the lexicon for either high or low tone and those morphemes that are left unspecified for tone (only monosyllabic morphemes appear in the paper). Morphophonemic rules that determine the tone pattern for certain combinations of 2-morpheme sequences are presented. All examples are from Navaho.
KEYWORDS: North America, Apachean, Athapaskan, Navaho, pitch accent, morphotonology, toneless morphemes, contour tones

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9205

Hoijer, Harry and Janet Joel (1963) "Sarsi Nouns" Studies in the Athapaskan Languages. Hoijer, Harry et al. (eds.) University of California Press, Berkeley. pp. 62-75
NOTES: University of California Publications in Linquistics Volume 29
ABSTRACT: Discusses and exemplifies the forms of nouns in Sarsi (spoken in Alberta, Canada). Three level tones are assumed (and contractions of two tones on long vowels) and the full exemplification allows inference of patterns of tonal distribution, and some noun compounds permit certain tonal processes to be observed.
KEYWORDS: tone distribution, Sarsi, Athapaskan, North America

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9206

Hollenbach, Barbara (1974) "Reduplication and Anomalous Rule Ordering in Copala Trique" IJAL. 40.3, pp. 176-181
ABSTRACT: The ordering relationship between a reduplication rule and a tone sandhi
rule is discussed in some detail. Arguments are presented in favor of a solution that contains a kind of global tone sandhi rule.
KEYWORDS: rule ordering, Mixtecan, global rules, Trique, Otomanguean, Central America,

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9207

Hollien, H. and g. P. Moore (1960) "Measurements of the Vocal

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Folds During Changes in Pitch" Journal of Speech and Hearing Research. 3.2, pp. 157-165
ABSTRACT: Results of measurements from laryngoscopic photographs show that length of vocal folds increases systematically with increases in vocal pitch for the natural register. Data tend to support the myoelastic theory of voice production.
KEYWORDS: physiology, larynx, pitch control

9208
Hombert, Jean-Marie (1973) "Speaking Backwards in Bakwiri" Studies in African Linguistics. 4.3, pp. 227-236
NOTES: Revised version of paper presented at Summer Linguistics Conference, University of California, Santa Cruz, 1973.
ABSTRACT: This paper explores theoretical implications of a word game played by young Bakwiri speakers which consists of reversing syllables. Of special interest is the fact that when the syllables are switched, the prosodic features of vowel length and tone do not move along with the shifted segments. It is then suggested that both the vowel length pattern and the tone pattern are stored with the lexical item, and not a particular segment or syllable.
KEYWORDS: language games, syllables, domain of tone, Bakwiri West Africa, Narrow Bantu, psychological reality, suprasegmental tone, segmental tone

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9209
Hombert, Jean-Marie (1973) "Word Games: Some Implications for Analysis of Tone and Other Phonological Processes" University of California Press, Berkeley.
NOTES: Expanded version of a paper presented at the Linguistic Society of America Meeting in San Diego, December 1973. The first part of this paper was read at the 1973 Summer Linguistics Conference in Santa Cruz.
ABSTRACT: It is suggested that word games can provide important insight into phonological systems. A word game was invented for getting information on the underlying representation of tone, i.e. whether tone is a property of the segment or some larger suprasegmental unit. The game was played with speakers of Dschang, Kru, Mandarin, Cantonese, Taiwanese, and Siamese. The results of the word game experiment are taken to suggest that the word should be regarded as the tone-bearing unit in the case of Dschang and Kru and perhaps in the Asian languages as well. The relative order of tone sandhi rules and word game rules in Taiwanese are also investigated.
KEYWORDS: language games, segmental tone, suprasegmental tone Siamese, suprasegmental matrix, domain of tone, Bantoid, Narrow Bantu, Bakwiri, Dschang, Kru, Mandarin, Cantonese, Taiwanese, West Africa, China, Southeast Asia, Kwa, Sinitic,

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Benue-Congo, Bamileke

9210

Hombert, Jean-Marie (1974) "Is Tone Segmental or Suprasegmental? How to Decide?" Phonology Laboratory, University of California, Berkeley.
ABSTRACT: Paper attempts to discuss implications of segmental vs. suprasegmental tone matrices. No new material is presented, but data drawn from Leben, Elimelech and others is used.
KEYWORDS: domain of tone, suprasegmental matrix, segmental tone, consonant types and tone, Siamese, acoustics, language games

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9211

Hombert, Jean-Marie and Larry Hyman (1974) "A New Approach to Downdrift" Monthly Internal Memorandum, Phonology Laboratory, University of California, Berkeley.
ABSTRACT: Hombert claims there are four kinds of languages with respect to downdrift. Downdrift is viewed as unmarked intonational feature, which can be blocked if it leads to perceptual confusion. Notes that consonants types do not have an inhibitory effect on downdrift.
KEYWORDS: downdrift, downstep, tone perception, tone typology, West Africa

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9212,

Hombert, Jean-Marie (1974) "Universals of Downdrift: Their Phonetic Basis and Significance for a Theory of Tone" Phonology Laboratory, University of California, Berkeley.
NOTES: Paper presented at 5th African Linguistics Conference, Stanford. Published in Studies in African Linguistics, Supplement 5, William Leben (ed.), pp. 169-194.
ABSTRACT: Paper attempts to answer 3 questions: phonetic nature of downdrift; why downdrift does not always occur; interaction between downdrift and tonal contrasts. Assumes that downdrift is natural assimilatory process (but offers no articulatory explanation) which can be blocked when it can lead to perceptual confusion. Suggests a criterion for determining whether lowering of tones reflects downdrift or tonal contrasts: tones should be at least 10 hz apart in order to represent phonemic contrast (but offers no reason). Does not state how many utterances were analyzed and acoustic analysis is not clear in all cases. Assumptions are of interest but need supporting evidence.
KEYWORDS: acoustics, consonant types and tone, instrumental study of tone, intonation and tone, stress and tone, tone

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perception, downdrift, downstep, physiology, pitch control, tone rules

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9213

Hombert, Jean-Marie (1974) "Tonogenesis" Phonology Laboratory, University of California, Berkeley.
ABSTRACT: Tonogenesis (historical acquisition of tone) seen as a cyclical process in relation to tonoexodus (loss of tone). Acquisition of tone stated to be more common. Suggests 2 conditions necessary for tonogenesis: monosyllabic morpheme structure and pressure toward homophony. Development of tone from segmentals discussed; the phonetic reasons are summarized. Voicing of final C less important than pre-vocalic voicing distinction. V durations before voiced C or voiceless
C . Role of aspiration and post vocalic [h]
considered, and other such influences then discusses 2 examples where tone differences seem to have resulted in voicing distinctions, although segmentals influenced by tone are very rare. Tonoexodus discussed briefly and the interaction between suprasegmental processes.
KEYWORDS: consonant types and tone, intrinsic pitch of vowels tonal development, tonogenesis, tonoexodus, vowel height and tone, vowel length and tone

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9214

Houis, Maurice (1956) "Schemes et Fonctions Tonologiques" Bulletin De L'institut Francais D'afrique Noire (I.P.A.N.) Series B. 18.3-4, pp. 335-368
KEYWORDS: Bobo, Efik-Ibibio, Mende, Mande, Soso, tone rules, syntactic structure and tone, Cross River, Benue-Congo

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9215

House, Arthur and Grant Fairbanks (1953) "The Influence of Consonant Environmnt upon the Secondary Acoustical Cha racteristics of Vowels" Journal of the Acoustical Society of America. 25.1, pp. 105-113
NOTES: Reprinted in Readings in Acoustic Phonetics, edited by Ilse Lehiste, pp.
129-136, M. I. T. Press, Cambridge, Massachusetts. 1967.
ABSTRACT: Consonant environments of vowels were varied by forming nonmeaningful stimulus syllables consisting of 72 combinations of 6 vowels and 12 consonants. Syllables were spoken by 10 male speakers of
American English. Results of measurements of fundamental frequency indicate that presence or absence of vocal fold vibration was the most important influence on the fundamental

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frequency of the vowel - vowels in voiced environments were lower in fundamental frequency. The manner of production and place of articulation of the consonant had little influence on the fundamental frequency of the vowel.
KEYWORDS: consonant types and tone, vowel height and tone, intrinsic pitch of vowels, English, Germanic, Europe

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9216

Howard, Irwin (1972) "A Directional Theory of Rule Application in Phonology" Ph. D. Dissertation, M. I. T.
NOTES: Reproduced by the Indiana University Linguistics Club, June, 1973.
ABSTRACT: Includes discussion of tone rules in Acoma (spoken in New Mexico) and Mandarin Chinese with reference to how phonological rules apply.
KEYWORDS: Acoma, Mandarin, China, North America, application of phonological rules, simultaneous application, directional rule application, tone sandhi, tone rules, Keres, North America

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9217

Howard, Irwin (1973) "Pitch Assignment in Japanese" Working Papers in Linguistics, Department of Linguistics, University of Hawaii. 5.1, pp. 45-57
ABSTRACT: An analysis of Japanese accentuation phenomena is formulated with directional rules, see Howard 1972.
KEYWORDS: domain of tone, Japanese, application of phonological rules, syntactic structure and tone, directional rule application, Far East, pitch accent

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9218

Howard, Philip (1963) "A Preliminary Presentation of Slave Phonemes" Studies in the Athapaskan Languages. Hoijer, Harry et al. (eds.) University of California Press, Berkeley. pp. 42-47
NOTES: University of California Publications in Linguistics Volume 29
ABSTRACT: In this preliminary report on the phonology of the Slave language (spoken in north-western Canada) A two level tone system is tentatively assumed with perhaps four phonetic levels and surface glides
occurring.
KEYWORDS: North America, Athapaskan, Slave

9219

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Howie, John (1966) "Experiments on the Perception of Mandarin Vowels and Tones" Status Reports on Speech Research, Haskins Laboratories, New Haven. 7-8, pp. 1-11
ABSTRACT: Results of perception tests on synthesized Mandarin tones show that tone
3 (low dipping) is incorrectly identified as tone 2 (high rising) when immediately followed by low neutral tone associated with tone 1 (high level). Tone 3 normally is followed by a high neutral tone in real speech,
tone 2 by a mid neutral tone also included are average curves for Mandarin tones.
KEYWORDS: acoustics, instrumental study of tone, tone perception, neutral tone, Mandarin, China, Sinitic

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Hsieh, Hsin-i (1970) "The Psychological Reality of Tone Sandhi Rules in Taiwanese" Papers from the 6th Regional Meeting of the Chicago Linguistic Society. Department of Linguistics, University of Chicago. pp. 489-503
ABSTRACT: Generative phonology makes the claim that phonological rules reflect 'psychological reality'. This paper reports on two experiments conducted to
test whether the phonological rules posited by generative phonologists for handling a regular tone sandhi phenomenon in Taiwanese are psychologically real or not. It is assumed that a native speaker of a language knows a rule if and only if he can apply that rule to construct novel forms. In the first experiment the subjects were presented with disyllabic verb-object constructions, each syllable pronounced in its citation form. Both potential and actual forms were used in various combinations. The subjects were then asked to pronounce each disyllabic verb /object sequence in the 'most natural' way according to their judgement. The results indicate that native speakers of Taiwanese cannot apply the tone sandhi rules to potential forms in the language. In the second experiment the subjects were asked to construct novel trisyllabic noun compounds using actual forms of the language. Results show that the subjects applied
the tone sandhi rules correctly a little over 50% of the time. Based on the results of these two experiments Hsieh concludes that the tone sandhi rules posited by generative phonologists do not reflect any psychological reality. Hsieh's explanation of the results of the two experiments involves a nother theory of phonology in which all morphophonemic alternants of each morpheme are listed in the lexicon. In the first experiment, for example, the subjects cannot produce the sandhi alternants of the potential forms because no sandhi alternants are listed in the lexicon for these non-occuring forms.
KEYWORDS: China, Taiwanese, tone rules, psychological reality, psycholinguistic experiments on tone

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9221

Hsieh, Hsin-i (1974) "Time as a Cause of Phonological Irregularities" Lingua. 33.3, pp. 253-263
ABSTRACT: Borrowing is often invoked as an explanation for existence of exceptions to phonological change. Hsieh argues that such exceptions can sometimes be more reasonably interpreted as due to incomplete and competing sound changes. Proposes to solve problems of numerous irregular reflexes of Middle Chinese short tone syllables in modern Pekinese by assuming five successive incomplete changes. Claims that Middle Chinese forms undergoing the full cycle of the changes have become regular reflexes in Pekinese, all other Middle Chinese forms which skip the operation of one or more rules have become irregular reflexes.
KEYWORDS: Sinitic, nature of sound change, China, tonal development, consonant types and tone, lexical diffusion, Pekinese

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9222

Hsueh-liang, Ma and T'ai Ch'ang-hou (1972), "A Preliminary Comparison of the Phonology of the Miao Dialects in Southeastern Kweichow" Miao and Yao Linguistic Studies. Herbert C. Purnell, Jr. (ed.) Southeast Asia Program, Cornell University, Ithaca, New York. pp. 27-54
NOTES: Contains selected articles in Chinese translated into English by Chang Yu-Hung and Chu Kwo-Ray. Data Paper No. 88, Linguistic Series VII.
KEYWORDS: tone correspondences, consonant types and tone, tone sandhi, tonal development, Miao, Miao-Yao, China

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9223

Hulstaert, g. (1950) "Tonologie Van Het Lomongo" Kongo-Overzee. 16, pp. 139-147
KEYWORDS: Mongo, Narrow Bantu, Central Africa, Benue-Congo, tone rules, morphotonology,

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9224

Hulstaert, g. (1961) "La Persistance Des Tons En Lomongo" Aequatoria. 24, pp. 102-105
ABSTRACT: Discusses problems of orthography, dialect variation and interpretation related to progressive tonal assimilation and vowel elision in Lomongo.

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KEYWORDS: orthography, tone rules, Mongo, Narrow Bantu, West Africa, Benue-Congo

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9225

Hung, Beverly (1959) "On the Phonemic Status of Navaho Stress" Anthropological Linguistics. 1.9, pp. 20-23
ABSTRACT: Concludes that stress is nonphonemic in Navaho. See Landar 1959.
KEYWORDS: stress and tone, Navaho, North America, Apachean, Athapaskan

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9226

Hunter, Georgia and Eunice Pike (1969) "The Phonology and Tone Sandhi of Molinos Mixtec" Linguistics. 47, pp. 24-40
ABSTRACT: Three tones - high, mid, and low - are posited for the San Pedro Molinos
dialect of Mixtec. Tone sandhi and tone variants are discussed.
KEYWORDS: Central America, tone sandhi, Mixtec, domain of tone, syllables, stress and tone, vowel length and tone, Mixtecan, Otomangue an

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9227,

Huttar, George and Mary Huttar (1972) "Notes on Djuka Phonology" Languages of the Guianas. Grimes, Joseph (ed.) Summer Institute of Linguistics, University of Oklahoma, Norman. pp. 1-11
NOTES: Followed on pp. 12-21 in the same book by a comparative wordlist of Djuka with Sranan and Saramaccan cognates (341 entries).
ABSTRACT: Posits two level tones for Djuka, from which stress placement can be predicted, and dicusses some rules of tone sandhi and pitch assignment, including one rule which 'flip-flops' a low-high sequence to high-low.
KEYWORDS: tone rules, tone sandhi, tone correspondences, Sranan, Saramaccan, polar tone, Atlantic Creole, Djuka, south America

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9228

Hyman, Larry (1972) A Phonological Study of Fe? Fe? - Bamileke. Studies in African Linguistics, Supplement 4, 230 pp.
ABSTRACT: This presentation of synchronic and diachronic aspects of the phonology of the Fe? Fe? dialect of Bamileke includes a full treatment of tone in chapter 6. The surface contrast of four levels is explained as resulting from historically prior sequences of high-high, high-low, low-high and low-low and a

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synchronic account is given which essentially recapitulates the historical processes. Surface tones and tonal alternations are largely captured by use of initial and final floating tones in underlying forms. Noun classes are discussed in chapter 7 in the light of the proposed tonal analysis.
KEYWORDS: tone rules, floating tones, morphotonology, level tones, tonal development, Bamileke, Fe? Fe?, Bantoid, Benue-Congo, West Africa

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9229

Hyman, Larry (1972) "The Great Igbo Tone Shift" University of Southern California, Los Angeles.
NOTES: Paper presented at the 3rd Annual African Linguistics Conference, Bloomington, Indiana.
ABSTRACT: Hyman proposes a historical account of Igbo tonology in order to explain
tone patterns in the associative phrase, verbal nouns etc. Essentially it is proposed that all stems were originally disyllables with polar tone on the second syllable, subsequently the second syllable was lost and the tone shifted to the left, displacing the original first tone. In polymorphemic words and compounds of various kinds several tones moved to the left, hence creating alternations of tone for a given morpheme.
KEYWORDS: Igbo, Kwa, West Africa, tonal development, tone rules, floating tones

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9230

Hyman, Larry (ed.) (1973) Consonant Types and Tone.
NOTES: Southern California Occasional Papers in Linguistics No. 1.
ABSTRACT: This volume contains papers by Ohala, Lea, Matisoff, Maran, Leben and Hyman presented at a symposium on consonant types and tone at the University of Southern California, March, 1973.
KEYWORDS: consonant types and tone, Chadic, Kwa, Sino-Tibetan, Viet, Mande, physiology, tonogenesis, tone splitting, tone rules

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9231

Hyman, Larry (1973) "The Role of Consonant Types in Natural Tonal Assimilations" Consonant Types and Tone. Hyman, Larry (ed.) Linguistics Program, University of Southern California, Los Angeles. pp. 151-179
KEYWORDS: consonant types and tone, tone rules, tone sandhi, Nupe, Ewe, Ngizim, Kpelle, Mboi, Bamileke, Mande, Kwa, Chadic, West Africa

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9232

Hyman, Larry and Russell Schuh (1974) "Universals of Tone Rules: Evidence from West Africa" Linguistic Inquiry. 5.1, pp. 81-115
NOTES: Revised version of "Universals of Tone Rules" working papers on Language
universals, Stanford University, 10: 1-50, 1972.
ABSTRACT: Hyman and Schuh propose an inventory of natural diachronic tone rules (downdrift, low-raising, spreading, absorption and simplification) and additional rules which are alsonatural synchronic rules but are not possible sound changes. these include downstep, shifting, copying, polarization, dissimilation, replacement, and displacement. In general these processes which are only synchronic rules
are seen as the result of the operation of several of the diachronic rules. It is maintained that tonal processes always involve rightward (perseverative) movement. Diachronic rules are not limited in this way. In a final section "segmental interference with natural tone rules" is discussed.
KEYWORDS: tone rules, tone sandhi, polar tone, West Africa, Ngizim, Chadic, Nupe, Kwa

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9233

Hymes, Dell (1966) "Some Points of Siuslaw Phonology" IJAL. 32.4 pp. 328-342,
ABSTRACT: In the course of a phonological survey of Siuslaw (spoken in Oregon, U.S.A.), Hymes disputes Frachtenberg's claim that it has pitch accent. Hymes interprets the pitch accent marks as either glottalization, or intonational contours not tied to particular lexical items.
KEYWORDS: intonation, Siuslaw, Penutian, North America

9234

Innes, Gordon (1967) "Genitival Phrases in Mande Languages" African Language Studies. 8, pp. 160-167
ABSTRACT: A discussion of the syntax, semantics and tone patterns of 'alienable' and 'inalienable' nominal possessives in Mende, Loko, Bandi and Kono leads to the conclusion that phrases consisting of object pronoun + verb are structually identical to genitival phrases consisting of possessive pronoun + noun.
KEYWORDS: syntactic structure and tone, Mande, Mende, Kono, Loko, Bandi, West Africa

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9235

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(1957) "Long Consonants and Their Tonal Function in Tetela" Kongo-Overzee. 23.3-4, pp. 200-212
ABSTRACT: Tetela has a long/short constrast in 15 of its 17 consonants. Comparison
with Nkundo shows these derive from a close vowel followed by a single consonant. The tonal contrast of the original syllable is maintained and the long consonants have high or low tone. Orthographically it is suggested that a tone mark not a doubled letter represent long consonants.
KEYWORDS: orthography, tone-bearing consonants, Tetela, Nkundo, Narrow Bantu, Benue-Congo, Central Africa, tonal development

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9236

Jacobs, John (1962) "Die Belangrijkste Elementen Van Het Tetela-Toonsystem" Africana Linguistica. (Terrunen). 1, pp. 31-42
KEYWORDS: morphotonology, Tetela, Central Africa, Narrow Bantu, Benue-Congo

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9237

Jacobsen, Per (1968) "The Word Tones of Serbo-Croatian, an Instrumental Study" Annual Report of the Institute of Phonetics, University of Copenhagen. 2, pp. 90-108
KEYWORDS: Slavic, Serbo-Croatian, Europe, instrumental study of tone, vowel length and tone, pitch accent

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9238

Jacobsen, Per (1970) "Falling Word Tones in Serbo-Croatian" Annual Report of the Institute of Phonetics, University of Copenhagen. 4 pp. 81-88
KEYWORDS: Slavic, Serbo-Croatian, Europe, tone perception, vowel length and tone, pitch accent

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9239

Jacobsen, Per (1973) "Falling Tones in Serbo-Croatian II" Annual Report of the Institute of Phonetics, University of Copenhagen. 7 pp. 265-268
ABSTRACT: Reports on an experiment in which it was shown that length was a more prominent cue to discrimination of falling word tones than pitch in Serbo-Croatian.
KEYWORDS: Serbo-Croatian, synthetic speech, contour tones, instrumental study of tone, vowel length and tone, Slavic, Europe, tone perception

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9240

Jensen, Martin Kloster (1958) "Recognition of Word Tones in Whispered Speech" Word. 14.2-3, pp. 187-196
ABSTRACT: A historical summary of the problem is presented, including theories of how pitch is realized in whispered speech (e.g. by substitution of stress, by vowel formant changes) and past experiments (spectrographic analyses and perceptual tests). Reports experiments on the recognition of whispered word tones in four languages: Norwegian, Swedish, Slovenian, and Mandarin Chinese. Concludes that word tones are reflected in whisper, but in some languages better than in others. Discusses but does not answer the question of how pitch is reflected in whisper.
KEYWORDS: Europe, China, Norwegian, Swedish, Slovenian, Mandarin, tone perception, Germanic, Slavic, Sinitic

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9241

Jensen, Martin Kloster (1961) "Tonemicity: a Technique for Determining the Phonemic Status of Suprasegmental Patterns in Pairs of Lexical Units, Applied to a Group of West Norwegian Dialects, and to Faroese", Arbok for Universitet I Bergen: Humanistik Serie. 1961:1, pp. 1-197
NOTES: Journal also titled Acta Universitatis Bergensis, Series Humaniorum Litt Erarum.
ABSTRACT: This work discusses problems of the origin and loss of tonal distinctions in North Germanic languages. Concluding that purely aural or instrumental techniques cannot determine if a givendialect has tonemic contrast, Jensen devised and applied a method involving measuring the identification of paired items considered to be potentially in minimal tonemic contrast recorded from subjects and randomized on playback. The procedures are discussed in full. Correct identification of 95-100% is regarded as confirmation that the subject perceives tonemic difference. Scores around 50% as confirming absence of tonemic distinction. Intermediate scores suggest different degrees of relevance for tonal distinctions. The technique confirmed Bergendialect as tonal and delimited a surrounding are a as non-tonal, and confirmed that Faroese is non-tonal.
KEYWORDS: tone perception, elicitation of tone, Norwegian, Faroese, Germanic

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9242

Jensen, Martin Kloster (1965) "Review of the Vowels and Tones of Standard Thai: Acoustical Measurements and Experiments by Arthur Abramson" Word. 21.1, pp. 163-166
KEYWORDS: instrumental study of tone, tone perception,

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Siamese, Southeast Asia, acoustics

9243

Johnston, Thomas (1973) "Speech-tone and Other Forces in Tsonga Music" Studies in African Linguistics. 4.1, pp. 49-70
ABSTRACT: Johnston discusses the extent to which speech-tone determines melodic outline in Tsonga songs and factors which permit or require deviation from the tones of spoken language.
KEYWORDS: music and tone, Tsonga, Southern Africa, Benue-Congo, Narrow Bantu

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9244

Kahler-Meyer, Emmi (1962) "Studien Zur Tonalen Struktur Der Bantusprachen Einleitung, Shambala" Afrika Und Übersee. 46.1 pp. 1-42
KEYWORDS: tone rules, morphotonology, Narrow Bantu, Benue-Congo, Shambala, East Africa

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9245

Kahler-Meyer, Emmi (1962) "Studien Zur Tonalen Struktur Der Bantusprachen, 2, Chasu" Afrika Und Übersee. 46.4, pp. 250-295
KEYWORDS: East Africa, tone rules, morphotonology, Narrow Bantu, Benue-Congo, Chasu

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9246,

Kahler-Meyer, Emmi (1964) "Tone Und Akzente in Der Formenlehre Des Chasu" Afrika Und Übersee. 47, pp. 89-133
KEYWORDS: Chasu, East Africa, Narrow Bantu, Benue-Congo, morphotonology, tone rules

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9247

Kahler-Meyer, Emmi (1967) "Tonal Behavior in the Word-structure of African Class Languages" Afrika Und Übersee. 51
ABSTRACT: A short description of word formation followed by a discussion of the reflexes of Proto-Bantu high and low tones in modern Bantu languages. There is a comparison with some of the Sudanic languages outside the Narrow Bantu group.
KEYWORDS: tone distribution, Benue-Congo, Narrow Bantu, West Africa, Southern Africa, Central Africa, East Africa, tonal development, Bantoid, tone correspondences

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9248
Kahler-Meyer, Emmi (1967) "The Tones in Urbantu" Afrika Und Ubersee. 51.2, pp. 81-90
NOTES: Paper read at the Second International Congress of Africanists, Dakar, Senegal, 11-20 December 1967.
ABSTRACT: Concludes that Proto-Bantu had two tones, that verbal extensions and ncun prefixes had low tone but stems and vowel suffixes could be either low
of high. Thus four patterns for Proto-Bantu words would be the maximum number of contrasting tone patterns.
KEYWORDS: tone correspondences, Narrow Bantu, Benue-Congo, Southern Africa, East Africa, Central Africa

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9249
Kaplan, Harold (1960) Anatomy and Physiology of Speech. McGraw-Hill, New York. 365 pp.
ABSTRACT: Structure of the larynx and mechanics of phonation covered in chapter 6,
pp. 113-146.
KEYWORDS: larynx, pitch control, physiology

9250
Karlgren, Bernard (1960) "Tone in Archaic Chinese" Bulletin of the Museum of Far Eastern Antiquities. 32, pp. 113-142
KEYWORDS: tonal development, Sinitic, Archaic Chinese, China

9251
Kaschube, Dorothe a (1954) "Examples of Tone in Crow" IJAL. 20.1 pp. 34-36
ABSTRACT: Crow is described as having high, low, and falling tones and long and short vowels. Falling tone is limited to occurrence with long vowels. Stress is marked as an independent variable but generally coincides with long vowels with high or falling tone. The limitations on co-occurrence of tones in two and three syllable
words are exhaustively described.
KEYWORDS: stress and tone, tone distribution, Crow, Siouan, North America

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9252
Kensinger, Kenneth (1963) "The Phonological Heirarchy of Cashinahua (Pa no)" Studies in Peruvian Indian Languages 1. Elson,

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Benjamin (ed.) Summer Institute of Linguistics, University of Oklahoma, Norman. pp. 207-220
NOTES: S.I.L. Publications in Linguistics and Related Fields No 9.
ABSTRACT: Suggests Cashinahua has two contrastive level tones with low semantic load. Patterns of tones within the phonological clause are limited to a sequence of high tones which may be followed by a sequence of lows which may in turn be followed by a sec ond sequence of highs. In this last case the second sequence of highs is
lower in pitch than the one before.
KEYWORDS: Cashinahua, pa noan, South America, downdrift

9253
Kiriloff, C. (1969) "On the Auditory Perception of Tones in Mandarin" Phonetica. 20.2-4
ABSTRACT: Results of 3 tests involving indentification of Mandarin (Peking dialect) tonemes by Australian first-year students are presented. It appears that when identification also involves other phonetic features ofthe utterance the number of mistakes is appreciably higher than when identification of tones only is made. It is also
observed that the majority of errors result from incorrect identification of the second (rising) tone and from confusion between the third (falling-rising) and second tones.
KEYWORDS: Sinitic, Mandarin, China, tone perception, Pekinese

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9254
Kirk, Lorraine (1973) "An Analysis of Speech Imitations by Ga Children" Anthropological Linguistics. 15.6, pp. 267-275
ABSTRACT: This study investigates differential sensitivity of Ga children between 2 and 3 years of age to suprasegmental aspects of their language, especially tone. The children were asked to imitate utterances. Their distortions of these utterances were assessed in terms of rhythym, tone, and segmental phonemes. It was found that Ga children imitate tone most accurately, segmental phonemes least accurately and rhythm with an intermediate degree of accuracy.
KEYWORDS: Ga, language acquisition, Kwa, West Africa

9255
Klatt, Dennis (1973) "Discrimination of Fundamental Frequency Contours in Synthetic Speech: Implications for Models of Pitch Perception" Journal of the Acoustical Society of America. 53.1
ABSTRACT: The just-noticeable difference (JND) for selected

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aspects of voice fundamental frequency contours was determined by varying the fundamental frequency control parameter of a digitally simulated terminal analog speech synthesizer. Data were obtained from 3 subjects for a number of 250-msec segments of the synthetic vowel /e/ differing only in fundamental freque ncy. Results indicate that the subjects can detect a change of 0.3 hz in
a constant fundamental frequency contour when Fo=120 hz, but the JND is an order of magnitude larger (2.0 hz) when the f0 contour is a linear descending ramp (32 hz/sec). Implications of these data for models of pitch perception mechanisms are discussed.
KEYWORDS: tone perception, acoustics, instrumental study of tone, speech synthesis

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9256
Knappert, Jan (1962) "The Tonological Behavior of the Word in Alur- a Study in Tone Syntax" Zeitschrift Fur Phonetik. 15, pp. 93-101
KEYWORDS: syntactic structure and tone, morphotonology, Alur Nilotic, East Africa, Nilo-Saharan

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9257
Knappert, Jan (1962) "The Verb in Dho-Alur" Journal of African Languages. 2.2. pp. 101-127
ABSTRACT: Extensive exemplification of the verbal paradigms of Alur (spoken in Uganda and Zaire) and of the role played by tone in morphology.
KEYWORDS: syntactic structure and tone, morphotonology, tone rules, Alur, function of tone, Nilotic, East Africa, Nilo-Saharan

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9258
Knappert, Jan (1962) "Derivation and Tone Deflection in CiNdau and Some Other Bantu Languages " Afrika Und Ubersee. 45, pp. 169-188
KEYWORDS: Narrow Bantu, Benue-Congo, Central Africa, morphotonology, tone rules, Ndau

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9259
Knappert, Jan (1968) "On Tonemes as Qualities of Vowels" Linguistics. 46, pp. 5-10
ABSTRACT: Attempts to show that tones are not suprasegmental features but rather are inherent features of vowels.
KEYWORDS: tone typology, domain of tone, segmental tone, suprasegmental tone, morphotonology

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9260
Knappert, Jan (1969) "The Phonemes of Alur: Vowels and Tones" Nomen: Leyden Studies in Linguistics and Phonetics. Sciarone, A. g. et al. (eds.) Mouton, the Hague. pp. 68-80
ABSTRACT: The article covers the vowels, vowel harmony, tones and some morphophonology in Alur (Zaire, UGanda). Three tones (high, mid and low) are recogn ized although mid tone is limited tofollowing a high tone and followed by high or the end of the word-group. Tone is r egarded as syllabic, and it is argued that it is suprasegmental because it has a morphological function.
KEYWORDS: East Africa, suprasegmental tone, morphotonology, Alur, Nilotic, Nilo-Saharan

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9261
Kock, Axel (1901) Die Alt- Und Neuschwedische Accentuierung Unter Beruksichtigung Der Ande ren Nordischen Sprachen. Trubner, Strassburg. 298 pp.
NOTES: Quellen und forschungen zur sprach- und culturgeschichte der Germanische n volker 87.
ABSTRACT: This book discusses at length the tonal accent and stress phenomena of words and compounds in Swedish from a historical point of view. Kock regards the tonal constrast as arising in Old Norse or earlier from different placement of stress in
words of different syllabic structure.
KEYWORDS: Swedish, Norwegian, Danish, stress and tone, pitch accent, Germanic, Europe, consonant types and tone

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9262
Kohler, Oswin (1956) "Das Tonsystem Des Verbum Im SudSotho", Mitteilungen Des Instituts Fur Orientforshcung. 4.3, pp. 435-474
ABSTRACT: Kohler shows Sotho to be a tone language with two basic tones. Verb morphotonology is discussed and exemplified at length on the basis of verb roots in high tone or low tone classes (loanwords from English or Afrikaans almost invariably enter the high class) and tone patterns dependent on the tense.
KEYWORDS: Southern Africa, Narrow Bantu, Benue-Congo, Sotho morphotonology, tone rules, loanwords

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9263
Kratochvil, Paul (1967) "On the Phonology of Peking Stress" Transactions of the Philological Society. pp. 154-178
KEYWORDS: China, Sinitic, Pekinese, stress and tone,

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syllables, syntactic structure and tone

9264
Kratochvil, Paul (1973) "Tone in Chinese" Phonology. Pudge, Erik (ed.) Penguin, Baltimore. pp. 342-353
NOTES: Excerpt from P. Kratochvil, The Chinese Language Today, Hutchinson, 1968.
ABSTRACT: Detailed discussion of phonetic characteristics of tones in modern standard Chinese in both citation and combination forms.
KEYWORDS: Sinitic, level tones, contour tones, tone sandhi, intensity and pitch, China, intonation and tone, stress and tone

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9265
Kroman, Erik (1947) Musikalsk Akcent I Dansk. Einar Munksgaard, Kobenhavn. 275 pp.
NOTES: Contains an appendix on Swedish immigration into Denmark in early times pp. 185-253 and a summary in English of the whole book pp. 267-275.
ABSTRACT: After surveying earlier work on intonation, tone, stress and the glottal
stop in Danish, Kroman expresses his own view that differences of pitch
range express different speech acts and the feelings of the speaker. He regards these correlations as tending towards universality where as word tone varies in different
parts of Denmark. Most of the country has a rising-falling tone for accent 1 words (and for emphatic stress). Other regions have two tonal accents, one of which occurs where a glottal stop appears in most Danish. Kroman concludesthat the s top arises from contraction of disyllabic forms and that the two accent regions have resulted from Swedish immigration rather than the retention of older common Scandinavian distinctions.
KEYWORDS: stress, consonant types and tone, tonal development Danish, Germanic, Europe, emotion and pitch

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9266
Kropp, Mary Esther (1966) "The Morphology of the Ga Aspect System" Journal of African Languages. 5.2, pp. 121-127
ABSTRACT: Using a two-level tone analysis with downstep, rules for the verbal forms in Ga are described.
KEYWORDS: Ga, Kwa, West Africa, morphotonology, downstep

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9267
Kropp, Mary Esther (1964) "The Morphology of the ADangme Verb Complex" Journal of African Languages. 3.1. pp. 80-95
ABSTRACT: Verbal aspects of Adangme are given in canonical form with rules that show morphophonemic adjustments in the verb phrase required to derive the forms in two idiolects. Nominalisations of verb stems are also briefly considered.
KEYWORDS: Adangme, Kwa, West Africa, morphotonology

9268
Kunene, Daniel (1972) "A Preliminary Study of Downstepping in Southern Sotho" African Studies. 31.1, pp. 1-24
KEYWORDS: Sotho, Narrow Bantu, Southern Africa, Benue-Congo downstep, downdrift

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9269
Ladefoged, Peter (1971) Preliminaries to Linguistic Phonetics. University of Chicago Press. 0-226-46786-4 122 pp.
Reviewed By: Halle, Morris. Language, 49.4: 926-933. 1973.
ABSTRACT: Ladefoged summarizes and illustrates the principal linguistic uses of pitch and various combinations of tonal and intonational features found in languages of the world. Sets of phonological features that have been proposed for tone and intonation are discussed on pp. 84-89.
KEYWORDS: tone features, intonation and tone, intonation

9270
Laigonaite, A. (1958) "Del Lietuviu Kalbos Kircio Ir Priegades Supratime" Kalbotyria. 1, pp. 71-99
ABSTRACT: Laigonaite investigated Lithuanian pitch and stress by 'optic phonograms' made in a film studio which recorded amplitude and wavelength. Conclusions were that Lithuanian doesn't have tonal constrasts since stressed syllables are distinguished by intensity (dynamic stress). All syllables long and short have 2 pronunciations sometimes the second half is more strongly stressed (rising intonation), sometimes the first half is more strongly stressed (falling intonation) although the short syllables are too short for the ear to perceive movements and they can be labelled short intonation. Non-tonic syllables in standard Lithuanian have rising intonation butsome non-standard dialects have falling intonation on post-tonic syllables.
KEYWORDS: Lithuanian, Baltic, Europe, pitch accent, instrumental study of tone

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9271

Lanham, L. W. (1958) African Studies. 17.2, pp. 65-81
ABSTRACT: This paper presents a detailed analysis of Xhosa tonology. Lanham posits
3 pitch phonemes - high, low, and falling. Factors that condition the phonetic realization of the tones are discussed. See Lanham 1963 for an updated analysis.
KEYWORDS: Narrow Bantu, Xhosa, Benue-Congo, tone rules, consonant types and tone, contour tones, downstep, intonation and tone, techniques for tonal analysis, Nguni, Southern Africa

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9272

Lanham, L. W. (1963) "The Tonemes of Xhosa: a Restatement" Studies in Linguistics. 17, pp. 35-58
ABSTRACT: This paper presents a detailed analysis of Xhosa tonology. Two register tonemes - high and low - are posited for Xhosa. The high-falling, gliding tone is analyzed as a sequence of high-low level tones. Lanham discusses in some detail five factors that condition the phonetic realization of the tones: 1. Non-phonemic rising glides are the result of the influence of preceding "depressor" consonants; 2. In a sequence of high tones, there is a tendency for each high tone to be realized at a pitch slightly higher than the preceding high or, alternatively, a sequence of 3 or more high tones
is realized as a sequence of relatively high pitches of about the same level, except for the final high tone which is of a higher pitch than any preceding high tone; 3. A low tone coinciding with a "non-depressor"
consonant and immediately succeeding a high tone is raised by assimilation and is usually realized as a falling glide; 4. A low tone that occurs between two high tones is raised by assimilation to high; and 5. Tonal downstep.
KEYWORDS: Nguni, Narrow Bantu, Benue-Congo, Xhosa, downstep downdrift, tone rules, contour tones, consonant types and tone, vowel length and tone, intonation and tone, southern Africa

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9273

Landar, Herbert (1959) "The Navaho Intonational System" Anthropological Linguistics. 1.9, pp. 11-19
ABSTRACT: Navaho is described as having three stress phonemes that are defined by degrees of loudness.
KEYWORDS: Navaho, North America, stress and tone, pitch accent, Apachean, Athapaskan

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9274

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Larson, Jerry (1970) "Phonological Properties of Prosodic Features" Papers from the 6th Regional Meeting of the Chicago Linguistic Society. Department of Linguistics, University of Chicago. pp. 520-525
ABSTRACT: Linguists have traditionally regarded the features stress, pitch, and tone as suprasegmental. This paper argues, however, that tone differs more from the suprasegmental features of stress and pitch than from other segmental phonological features. Two arguments are given - one formal, the other statistical. Within the framework of generative phonology it is observed that the kinds of rules that have been formulated to handle stress and pitch phenomena differ from those formulated to handle tonal phenomena. It is also observed that no language is without stress and intonation (syntactically determined pitch), but many languages, of course, are without tone. Tone features, however, are considered suprasegmental in the sense that their domain is larger than the segment.
KEYWORDS: tone rules, tone features, stress, suprasegmental tone,

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9275
Larson, Jerry (1971) "Downstep, Downdrift, and Diacritics" Studies in African Linguistics. Supplement 2, pp. 171-181
NOTES: Supplement 2 contains papers from the Second Conference on African Linguistics, UCLA, March 26-27, 1971.
KEYWORDS: downstep, downdrift, diacritic features, West Africa

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9276
Lavelle, Carl (1974) "An Experimental Study of Yoruba Tone" Studies in African Linguistics. Supplement 5, pp. 185-194
NOTES: Paper presented at the 5th Annual Conference on African Linguistics, Stanford. Also printed in UCLA Working Papers in Phonetics 27 pp. 160-170.
KEYWORDS: Yoruba, downdrift, Kwa, West Africa

9277
Lawton, David (1968) "The Implications of Tone for Jamaican Creole" Anthropological Linguistics. 10.6, pp. 22-26
ABSTRACT: Jamaican Creole is said to have 3 relative tone levels that function lexically and phonologically as a basic part of the vowels- a high falling tone, a mid level tone, and a low level tone. Five vowels- i e a o u - are set up as underlying. Lengthened allophones of a i u co-occur with the high falling tone.
KEYWORDS: jamaican Creole, morphotonology, vowel length and

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tone, Atlantic Creole, Central America

9278

Lea, Wayne (1973), "Segmental and Suprasegmental Influences on Fundamental Frequency Contours" Consonant Types and Tone. Hyman, Larry (ed.) Linguistics Program, University of Southern California, Los Angeles. pp. 15-70
NOTES: Southern California Occasional Papers in Linguistics No 1.
KEYWORDS: consonant types and tone, acoustics, instrumental study of tone, pitch control, intonation, stress, English, Germanic, Europe

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9279

Leal, Mary (1950) "Patterns of Tone Substitution in Zapotec Morphology" IJAL. 16.3, pp. 132-136
ABSTRACT: Villa alta Zapotec is described with three level tones. Verb and noun stems are divided into three classes (with subclasses) on the basis of their tones and the patterns of tone substitution they follow. These include change and deletion of stem tone. Suffix tone changes are also conditioned by certain stems.
KEYWORDS: tone rules, morphotonology, Zapotec, central America, Otomanguean

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9280

Leben, William (1971) "On the Segmental Nature of Tone in Thai" Quarterly Progress Report, Research Laboratory of Electronics, Massachusetts Institute of Technology. 101, pp. 221-224
ABSTRACT: Leben argues that Thai is a language in which tone must be treated as a segmental rather than a suprasegmental feature in order to account for vowel shortening and tone simplification of the first element in certain Thai compound constructions. The rule he proposes combines the vowel shortening and tone simplification operations in a
way tha the claims parallels the Sanskrit coalescence of /ai/ and /au/ into /e/ and /o/, respectively. His analysis assumes that long vowels are derived from underlying sequences of two short vowels, contour tones are derived from underlying sequences of level tones, and that each level tone is uniquely associated with some sonorant segment.
KEYWORDS: Southeast Asia, segmental tone, Tai, Siamese, tone rules, suprasegmental matrix

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9281

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Leben, William (1971) "Suprasegmental and Segmental Representation of Tone" Studies in African Linguistics. Supplement 2, pp. 183-200
NOTES: Paper presented at the 2nd Annual Conference on African Linguistics, University of California, Los Angeles.
ABSTRACT: In this paper, Leben hypothesizes that tone is phonologically a suprasegmental feature and that only level tones appear in underlying phonological representations. He bases his hypothesis primarily on evidence from three West African languages - Hausa, Mende, and Yala. His analysis includes a detailed account of tonal phenomena in noun-compound formation in Mende. To handle apparent counterexamples to his claim that tone is a suprasegmental phenomenon, Leben permits suprasegmental information to be translated into segmental information at some stage in
the derivation. He provides no formal mechanism for this translation process, however. He claims that all tone rules that don't require segmental information will apply before any of those that do in the course of a derivation.
KEYWORDS: West Africa, Yala, Hausa, Mende, contour tones, suprasegmental matrix, Mande, Chadic, Kwa

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9282
Leben, William (1971) "The Morphophonemics of Tone in Hausa" Papers in African Linguistics. Kim, Chin-wu and Herbert Stahlke (eds.) Linguistic Research Inc, Edmonton and Champaign. pp. 201-218
ABSTRACT: Leben posits an exceptionless rule of final low tone raising which raises the second of a sequence of final low tones if the syllable has a long
vowel. This rule explains a non-accidental gap in Hausa tone patterns. Leben uses the rule to explain seemingly exceptional behavior of object pronoun tone assignment, and together with some other tone rules attempts to predict the form of the feminine of derived nouns and adjectives. Also posits rules of tone deletion, tone incorporation, and simplification of sequences of LH on the same syllable to H. In some parts a very abstract analysis. Some cases of absolute neutralization.
KEYWORDS: tone rules, West Africa, Hausa, morphotonology, Chadic, absolute neutralization, suprasegmental tone, domain of tone

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9283
Leben, William (1973) "The Role of Tone in Segmental Phonology" Consonant Types and Tone. Hyman, Larry (ed.) Linguistics Program, University of Southern California, Los Angeles. pp. 115-150
KEYWORDS: suprasegmental matrix, segmental tone, stress, Siamese, Mende, Hausa, Mandekan, Tai, Mande, Chadic, West Africa, Southeast Asia

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9284

Leben, William (1973) Suprasegmental Phonology. Massachusetts Institute of Technology, Cambridge.
NOTES: Prof. thesis
ABSTRACT: Leben's principal claim is that certain phonological properties (especially tone and nasalization in this case) may be part of a suprasegmental matrix attached to the word or morpheme in the lexicon along with the usual segmental phonological matrix. It is claimed that certain generalisations about tone in Mende, Hausa, Bambara etc cannot be stated economically except by this device, which predicts the occurence of rules that will operate on tones independently of segments, and the occurence of floating tones and toneless morphemes in both of which one of the matrices is unfilled. Thai is put forward as a langu age in which tone is segmental.
KEYWORDS: suprasegmental matrix, segmental tone, tone rules, floating tones, toneless morphemes, Mende, Mande, Mandekan, Siamese, Tai, Hausa, Chadic, West Africa, Southeast Asia

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9285

Leenhardt. M (1946) Langues et Dialectes De L'austro-melanesie. Institute De L'ethnologie, Paris. 676 pp.
NOTES: Travaux et Memoires de l'Institut d'Ethnologie 46.
ABSTRACT: Leenhardt presents considerable data on languages of New Caledonia and the Loyalty Islands. In many cases tonal contrasts are reported, for example four levels, in Ajie p. 13; elsewhere comments on the musical profile and accentuation are not always precise.
KEYWORDS: Pacific Islands

9286

Lehiste, Ilse (1961) "Some Acoustic Correlates of Accent in Serbo-Croatian" Phonetica. 7.2-3, pp. 114-147
ABSTRACT: This paper provides an acoustic phonetic description of the accent types
used by the speakers of the Belgrade dialect of Serbo-Croatian.
KEYWORDS: pitch accent, Serbo-Croatian, Slavic, acoustics, Europe, vowel length and tone

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9287

Lehiste, Ilse and Gordon Peterson (1961) "Some Basic Considerations in the Analysis of Intonation" Journal of the Acoustical Society of America. 33.4, pp. 419-425
ABSTRACT: This paper considers some basic problems inherent in

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the instrumental analysis of intonation. The problems are illustrated by a detailed analysis of one intonation contour in American English. Included is a discussion of the intrinsic fundamental frequencies of the various syllabic nuclei and the influence of preceding and following consonants.
KEYWORDS: consonant types and tone, intrinsic pitch of vowels instrumental study of tone, acoustics, intonation, English, Germanic, Europe

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9288

Lehiste, Ilse (1970) Suprasegmentals. MIT Press, Cambridge, Massachusetts. 194 pp.
ABSTRACT: Lehiste surveys what is currently known about the phonetic nature of suprasegmentals (quantity, stress, pitch) and evaluates theavailable evidence from the point of view of linguistic theory. Her emphasis is on the production and perception of suprasegmental features. Sheattempts to identify the phonetic conditioning factors within which the features may be manifested, then considers their linguistic function at the word level and at the sentence level. Chapter 2 deals with duration and its linguistic function. Here, Lehiste considers physiol ogical mechanisms involved in producing quantity phenomena, their physical (acoustic) manifestation, the perceptual correlates of quantity, various phonetic phenomena connected with quantity, and the linguistic function of quantity. Chapter 3 considers the suprasegmental elements of pitch, tone, and intonation in a similar fashion; likewise, chapter 4 which deals with stress. In chapter 5 Lehiste gives a summary of the evidence for suprasegmental phonological units and considers how they might be integrated into linguistic theory. The languages most frequently referred to throughout the book are English, Estonian, Serbo-Croatian, Finnish, Czech, Latvian, Danish, Norwegian, Russian, and German.
KEYWORDS: stress, tone features, domain of tone, tone perception, pitch control, consonant types and tone, vowel height and tone, tone synthesis, intonation and tone, contour tones, electromyography, Europe

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9289

Lehiste, Ilse and P. Ivic (1972) "Experiments with Synthesized Serbo-Croatian Tones" Phonetica. 26, pp. 1-15
KEYWORDS: speech synthesis, tone perception, Serbo-Croatian, Slavic, Europe, vowel length and tone

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9290

Lehman, F. K. (1974) "Tibeto-Burman Syllable Structure, Tone, and the Theory of Phonological Conspiracies" Issues in Linguistics:

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Papers in Honor of Henry and Renee Kahane. Braj Kachru et al. (eds.) University of Illinois Press, Urbana. pp. 515-547
KEYWORDS: Southeast Asia, Tibeto-Burman, tone typology, tonogenesis, consonant types and tone, boundaries, phonological conspiracies

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9291
Leon, Frances and Morris Swadesh (1949) "Two Views of Otomi Prosody" IJAL. 15.2, pp. 100-105
ABSTRACT: This article disputes the claim of sinclair and Pike that Otomi (Mezquital dialect) is a tone language and regards the phenomena in question as a stress system.
KEYWORDS: stress and tone, tonal analysis, Otomi, Otomanquean, Central America

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9292
Leon, Pierre and Philippe Martin (1972) "Machines and Measurements" Intonation. Bolinger, Dwight (ed.) Penguin, Baltimore. pp. 30-47
NOTES: Translated into English by Susan Husserl-Kapit.
ABSTRACT: Contains brief discussion of consonantal influences on pitch.
KEYWORDS: intonation and tone, consonant types and tone, instrumental study of tone

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, 9293
Leslau, Wolf (1958) "Mocha, a Tone Language of the Kafa Group in South-western Ethiopia" Africa. 28.2, pp. 135-147
ABSTRACT: Mocha (called shakka by its speakers) has lexical tone contrasts. Three tones, high, falling and low, occur and there is some correlation of syllable length and tone.
KEYWORDS: Cushitic, East Africa, vowel length and tone, Mocha, Kafa, shakka

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9294
Lewis, Don, Milton Cowan, and Grant Fairbanks (1940) "Pitch and Frequency Modulation" Journal of Experimental Psychology. 27.1 pp. 23-36
ABSTRACT: Investigation of frequency modulation in short pulses of sound. Results showed that the extent of pitch changearising from short pulses
of sound in which frequency is modulated (a) increases with increases in, the extent of modulation (b), decreases with increases in the rate of mo dulation (c), is somewhat greater for

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sinusoidal than for linear forms of modulation of the same extent and rate and (d), is apparently independent of the direction of modulation.
KEYWORDS: tone perception, level tones, contour tones

9295

Lewis, Paul (1968) "Akha Phonology" Anthropological Linguistics. 10.2, pp. 8-18
ABSTRACT: Each syllable of Akha is said to be spoken on one of three level tones if the vowel is plain, or one of two level tones if the vowel is laryngealized.
KEYWORDS: Akha, Tibeto-Burman, Southeast Asia, tone distribution, Lolo-Burmese, phonation type and tone

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9296

Lewis, Paul (1973) "Tone in the Akha Language" Anthropological Linguistics. 15.4, pp. 183-188
ABSTRACT: Akha is described as having 3 level tones-high, mid, and low. A cursory examination of syllable counts from various types of Akha text suggests perhaps that tone tends to be fairly stable in the Akha language, and does not change as rapidly as the consonants and vowels.
KEYWORDS: Akha, Tibeto-Burman, Southeast Asia, music and tone, morphotonology, reduplication, whistle speech, Lolo-Burmese

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9297

Li, Fang-Kuei (1937) "Languages and Dialects" The Chinese Year Book. pp. 59-65
ABSTRACT: This article groups the languages and dialects of China and lists distinguishing characteristics of each group. Of special interest are the tonal characteristics.
KEYWORDS: China, Sinitic, Miao-Yao, Tai

9298

Li, Fang-Kuei (1947) "The Hypothesis of a Pre-glottalized Series of Consonants in Primitive Tai" Bulletin of the Institute of History and Philology, Academia Sinica. 11, pp. 177-187
ABSTRACT: In modern Tai dialects syllable-initial voiced consonants [b d j] behave
like the glottal stop with respect to tone. To account for this agreement in tonal behavior, Li hypothesizes that [b d j] were originally pre-glottalized. The influence of the glottal stop and [ʔb ʔd ʔj] on the development of tones is

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discussed in
some detail for the following Tai dialects: Siamese, Po-ai, and T'ien-pao.
KEYWORDS: Southeast Asia, Tai, Po-ai, tonal development, consonant types and tone, Siamese, tone splitting, Northern Tai T'ien-pao

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9299
Li, Fang-Kuei (1948) "The Distribution of Initials and Tones in the Sui Language" Language. 24.2, pp. 160-167
ABSTRACT: Li suggests that 3 of the tones in modern Sui (spoken in the southeastern part of Kweichow, China) developed in syllables with voiceless initials, and 3 of the tones in syllables with voiced initials.
KEYWORDS: Southeast Asia, Kam-Sui, Sui, tonal development, consonant types and tone, China, tone splitting

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9300
Li, Fang-Kuei (1949) "Tones in the Riming System of the Sui Language" Word. 5.3, pp. 262-267
ABSTRACT: The riming syllabls in Sui (spoken in the southeastern part of Kweichow province, China) folk songs are regulated, in part, by tone. Most of the,
riming syllables have the same tone. There are, however, many cases of riming syllables of different tones. These riming syllables seem to be aberrant since one cannot find any special phonetic reason for the syllables to be so grouped. They are shown to be perfectly regular, however, for a reconstructed Proto-Sui tone system.
KEYWORDS: Kam-Sui, Southeast Asia, Sui, tonal development, rhyme, literary style and tone, consonant types and tone, China

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9301
Li, Fang-Kuei (1954) "Consonant Clusters in Tai" Language. 30.3 pp. 368-379
ABSTRACT: This article includes a summary of tonal development in 6 Tai dialects -
Siamese, Lao, Wu-ming, Lung-chow, Po-ai, and Tien-chow - based on four tonal categories in Proto-Tai. See pp. 369-371.
KEYWORDS: Southeast Asia, Tai, Siamese, Lao, Wu-ming, Lung-chow, Po-ai, Tien-chow, tonal development, consonant types and tone

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9302
Li, Fang-Kuei (1957) "The Jui Dialect of Po-ai and the Northern Tai" Bulletin of the Institute of History and Philology, Academia Sinica. 29.1, pp. 315-321
ABSTRACT: This article includes a discussion of the influence of the Proto-Tai glottalized consonants on the development of tone in Po-ai as contrasted with other Northern Tai dialects.
KEYWORDS: Southeast Asia, Tai, tonal development, Po-ai, Siamese, Northern Tai, consonant types and tone

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9303
Li, Fang-Kuei (1964) "The Phonemic System of the Tai Lu Language" Bulletin of the Institute of History and Philology, Academia Sinica. 35, pp. 7-14
ABSTRACT: This paper presents a short description of the Tai Lu language (=Lue, spoken in the southern part of Yunnan province, China and the Northern part of Laos). Tones are discussed on pages 9-10 including a description of a tone sandhi process.
KEYWORDS: Southeast Asia, Tai, Lue, tone rules, tone sandhi

9304
Li, Fang-Kuei (1966) "Notes on the T'en (Yanghuang) Language, Part I: Introduction and Phonology" Bulletin of the Institute of History and Philology, Academia Sinica. 26.2, pp. 419-426
ABSTRACT: This article includes a brief description of the tonal structure of the T'en language and a few examples of tone sandhi.
KEYWORDS: Southeast Asia, Kam-Sui, tone rules, T'en, tone sandhi

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9305
Li, Fang-Kuei (1966) "The Relationship Between Tones and Initials in Tai" Studies in Comparative Austroasiatic Linguistics. Zide, Norman (ed.) Mouton, the Hague. pp. 82-88
ABSTRACT: Li surveys 5 representative Tai dialects - Siamese, Lung-chow, Nakhonsithamarat, Chiengmai, Po-ai, and T'ien-pao - in the classification of syllable-initial consonants on the basis of their influence on the development of tones.
KEYWORDS: tonal development, Southeast Asia, consonant types and tone, Siamese, Lung-chow, Nakhonsithamarat, Chiengmai, Po-ai, T'ien-pao, Tai

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9306
Li, Fang-Kuei (1970) "Some Tonal Irregularities in the Tai Languages" Studies in General and Oriental Linguistics.

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Jakobson, Roman and Shigeo KawAmoto (eds.) T.E.C. Company, Ltd. Tokyo. pp. 415-422
ABSTRACT: It is suggested that tonal irregularities in the Tai languages indicate tone and consonant alternations in the proto-language. Traces of these morphophonemic alternations are pointed to in various modern Tai languages, including Siamese. Doublets are reconstructed for the proto-language. Each Tai language generalized one or the other of the morphophonemic alternants. As a result, some irregularities occur in the tonal correspondences in the Tai language.
KEYWORDS: Southeast Asia, Tai, tonal development, tone correspondences, Siamese

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9307

Liem, Nguyen Dang (1967) "Phonemic Syllable Repertory in Vietnamese" Linguistic Circle of Canberra Publications, Series A-Occasional Papers. 9, pp. 11-18
NOTES: Papers in Southeast Asian Linguistics No. 1.
ABSTRACT: Provides an outline of segments in Saigon Vietnamese and tables showing possible combinations in syllables. Of the five tones (high-rising, low- rising, mid-rising, hihg-level, low-level) only the fist two can occur in syllables with final stops.
KEYWORDS: Southeast Asia, Vietnamese, Viet, tone distribution, syllables

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9308

Liljeblad, Sven (1950) "Bannack I: Phonemes" IJAL. 16.3, pp. 126-131
ABSTRACT: Liljeblad say Bannack has two level tones which are fixed (in contrast to stress, which shifts). Tones are only heard on fully stressed syllable s.
KEYWORDS: stress and tone, Bannack, shoshonean, North America, Uto-Aztecan

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9309

Lin, Ying (1972), "Chinese Loanwords in Miao" Miao and Yao Linguistic Studies. Herbert C. Purnell, Jr. (ed.) Southeast Asia Program, Cornell University, Ithaca, New York. pp. 55-81
NOTES: Contains selected articles in Chinese translated into English by Chang and Chu Kwo-Ray. Data Paper No. 88, Linguistic Series VII.
KEYWORDS: tone correspondences, loanwords, tonal development consonant types and tone, Miao, Miao-Yao, China

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9310

Lindquist, J. M. Sawashima, and Hajime Hirose (1973) "An Investigation of the Vertical Movement of the Larynx in a Swedish Speaker" Annual Bulletin of the Research Institute of Logopedics and Phoniatrics,
Tokyo. 7, pp. 27-34
ABSTRACT: X-ray cine of one subject. Laynx tends to be lowered more for voiced stop consonants than for voiceless stops and nasals. Larynx height appears not to be correlated with fundamental frequency.
KEYWORDS: larynx, physiology, pitch accent, pitch control Swedish, Germanic, Europe

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9311

List, George (1961) "Speech Melody and Song Melody in Central Thailand" Ethnomusicology. 5.1, pp. 16-32
NOTES: Reprinted in Intonation, edited by Dwight Bolinger, pp. 263-241. Penguin
Books, Baltimore, 1972.
KEYWORDS: music and tone, Tai, Southeast Asia

9312

Longacre, Robert (1952) "Five Phonemic Pitch Levels in Trique" Acta Linguistica. 7, pp. 62-82
ABSTRACT: Longacre claims that Trique (spoken in Oaxaca, Mexico) has five distinctive level tones. Because of distributional restrictions not discussed by
Longacre, however, the Trique system is no more complex than a 4-level tone system. Specifically, the two highest tones are very restricted in distribution. He also mentions 'subphonemic stress', which affects the pitch of the phonemic tones. Tone 3 is raised under stress; tones 4 and 5 are lowered.
KEYWORDS: Central America, stress and tone, level tones, Trique, Mixtecan, Otomanguean, techniques for tonal analysis

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9313

Longacre, Robert (1957) Proto-Mixtecan. Indiana University Research Centre in Anthropology, Folklore, and Linguistics (Publication Five), Bloomington. 195 pp.
NOTES: Appeared as IJAL 23.4
ABSTRACT: Longacre argues that Mixtec, Cuicatec, Trique and Amuzgo form a Mixtecan
group. Chapter 6 is concerned with tone. After presenting outlines of the tone systems of two dialects of Mixtec and one each of Cuicatec and Trique, Longacre argues that fourteen two-tone sequences (couplets) are required to account for

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correspondences observed, therefore Proto-Mixtecan must have had four tones to make so many differing couplets possible. However, only eight basic couplets, which do not involve the highest level of tone, are reconstructed for underlying forms while the highest level is introduced
by sandhi rules which must have operated in Proto-Mixtec.
KEYWORDS: tone rules, tone sandhi, tonal development, Mixtec Mixtecan, Otomanguean, Central America

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9314

Longacre, Robert (1959) "Trique Tone Morphophonemics" Anthropological Linguistics. 1.4, pp. 5-42
KEYWORDS: Trique, Mixtecan, Central America, morphotonology tone sandhi, Otomanguean, level tones

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9315,

Loos, Eugene (1969) The Phonology of Campanahua and Its Grammatical Basis.
NOTES: S. I. L. Publications in Linguistics and Related Fields No. 20.D. Disser tation submitted to the University of Texas, Austin, 1967.
ABSTRACT: In a chapter on stress and pitch rules Loos argues that both stress and tone are predictable from syllable structure and number of syllables but the stress rules which assign + pitch and +stress are followed by pitch rules which apply cyclically and sometimes derive forms in which stress no longer coincides with high tone. There are also final cycle pitch rules which assign one of three phonetic values (including mid tones derived from sentence-final high preceded by low) to each syllabic segment.
KEYWORDS: Campanahua, pa noan, South America, tone rules, stress and tone, pitch accent, tone features

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9316

Louw, J. A. (1971) "The Tonal Paradigm of the Verb in Xhosa" Afrikansiche Sprachen Und Kulturen - Ein Querschnitt. Six, Veronika, et al. (eds.) Deutsches Institut Fur Afrika-forschung, Hamburg. pp. 102-113,
KEYWORDS: Xhosa, Nguni, Southern Africa, Narrow Bantu, Benue-Congo, morphotonology

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9317

Loving, Richard (1966) "Awa Phonemes, Tonemes, and Tonally Differentiated Allomorphs" Linguistic Circle of Canberra

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Publications, Series A. 7, pp. 23-32
NOTES: Papers in New Guinea Linguistics No. 5. Reprinted in McKaughan 1973 pp. 10-18.
ABSTRACT: Four tonemes (high, low, falling, rising are proposed for Awa. Tonemic variants and distribution are discussed (successive high tones are higher in pitch, low tones lower in pitch; the most frequent tone is low then in order high, falling, rising). Across word boundaries, word-final rising becomes low, word-initial low becomes falling when preceded by rising. Basic tones on nouns are perturbed when certain classes of words precede. One class causes following monosyllabl es to become rising, polysyllables to become low on the first syllable and high for the reainder.Another class perturbs the following tones to high. Following perturbation all subsequent words in the noun phrase also become high throughout. Tones of noun suffixes are also frequently determined by the final tone or class of the preceding noun.
KEYWORDS: tone distribution, downdrift, morphotonology, tone sandhi, tone rules, Awa, New Guinea, east New Guinea Highland Stock

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9318

Lovins, Julie (1971) "Melodic Conspiracies in Lomongo Tonology" Papers from the 7th Regional Meeting, Chicago Linguistic Society. 7, pp. 469-478
KEYWORDS: suprasegmental tone, Mongo, Narrow Bantu, Benue-Congo, Central Africa, tone rules, phonological conspiracies

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9319

Ludtke, Helmut (1959) Das Prosodische System Des UrSlavischen Und Seine Weiterentwicklung. Phonetica.
ABSTRACT: Proto-Slavic prosodic system and its development in Serbo-Croatian.
KEYWORDS: Slavic, Serbo-Croatian, tonal development, consonant types and tone, Europe, pitch accent

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9320

Lukas, Johannes (1969) "Tonpermeable Und Tonimpermeable Konsonanten Im Bolanci (NordNigerien)" Ethnological and Linguistic Studies in Honour of N. J. Van Warmelo. Department of Bantu Administration and Development, South Africa. pp. 133-138
NOTES: Ethnological Publications No. 52.
KEYWORDS: consonant types and tone, tone rules, Bolanci, Chadic, West Africa

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9321

Maddieson, Ian. (ed.), (1970) Tone in Generative Phonology. Department of Linguistics and Nigerian Languages, University of Ibadan. 97 pp.
NOTES: Research Notes, University of Ibadan 3.2-3
ABSTRACT: This volume contains papers from a Round Table Meeting held at Ibadan to discuss questions arising from the application of generative phonological theory to tonal phenomena. Following presentation and discussion of papers, a series of 'conclusions' was agreed on. These are printed on pp. 77-82 and outline a segmental theory of tone.
KEYWORDS: tone features, downstep, downdrift, tone rules, floating tones, segmental tone

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9322

Maddieson, Ian (1970) "The Inventory of Features Required for Handling Tone in Transformational Phonology" Research Notes, University of Ibadan. 3.2-3, pp. 3-18
NOTES: Papers presented at a Round Table Meeting on Tone in Generative Phonology held at the University of Ibadan, May 1970.

ABSTRACT: In this paper Maddieson presents phonetic and phonological arguments in support of the following set of phonological features for tone:[raised],[lowered] and [extreme]. Adopting Woo's position on contour tones, he only permits level tones in underlying forms. Also included are evaluations of earlier proposals for distinctive features of tone - Gruber 1964, Wang 1967, Sampson 1969, Woo 1968 - all of which he finds to be descriptively inadequate for either formal or linguistic reasons. A major assumption of Maddieson's theoretical framework is that there is a 'neutral' median pitch. Implicit here is the idea that the greater the number of pitch levels, the greater the overall range of pitch.
KEYWORDS: tone features, contour tones, level tones, segmental tone

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9323

Maddieson, Ian (1972) "Tone System Typology and Distinctive Features" Proceedings of the Seventh International Congress of Phonetic Sciences. Rigault, Andre and Rene Charbonneau (eds.) Mouton, the Hague. pp. 958-961
ABSTRACT: Maddieson argues that tone systems may differ not only in terms of the number of tones but also by the relationship between the tones in terms of markedness. In particular three West African languages with three level tones (Yoruba, Yala, Jukun) are shown to differ in the hierarchy of dominance of their tones.

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These differences are related to different selections from a set of 'universal tones' defined by the features[raised],[lowered] and[extreme],
KEYWORDS: tone features, tone rules, West Africa, tone typology, Yoruba, Yala, Jukun, Kwa, Benue-Congo, Jukunoid

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9324
Maddieson, Ian (1974) "A Note on Tone and Consonants" Working Papers in Phonetics, University of California, Los Angeles. 27 pp. 18-27
ABSTRACT: This paper takes issue with the claim that "consonants affect tone but tone does not affect consonants". A number of cases of synchronic and diachronic effects of tone on consonants are reviewed and reasons for regarding transitional effects in one direction
to be as natural as in the other are put forward.
KEYWORDS: consonant types and tone, tone rules, tonal development

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9325,
Maddieson, Ian (1974) "A Possible New Cause of Tone-splitting: Evidence from Cama, Yoruba and Other Languages" Studies in African Linguistics. Supplement 5
NOTES: Paper presented at the 5th Conference on African Linguistics. Also appeared in UCLA Working Papers in Phonetics 27 pp. 28-xx.
ABSTRACT: This paper reviews evidence for the belief that three-level tone systems
in Niger-Congo languages such as Yoruba derived from earlier two-level systems. Comparison of forms from Cama and Yoruba suggests that a fortis/lenis contrast of consonants may have been a cause of tone-splitting, fortis consonants producing lower tone reflexes. Possible physiological reasons for this change are discussed and placed in the context of other known cases of historical consonant effects on tones.
KEYWORDS: consonant types and tone, Yoruba, Cama, West Africa, Kwa, tonal development, tone splitting

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9326
Maddieson, Ian, Timothy Shopen, and Jenny Okello (1973) "Lango Tonology, Suprasegmentality, and Paradigms" Indiana University, Bloomington.
NOTES: Paper presented at the 4th Annual Conference on African Linguistics.
ABSTRACT: This paper argues that a suprasegmental representation of tone cannot be

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justified for Lango. Tone rules required must make reference to number or types of segments, and apply in a right iterative cycle. Verb tones are analyzed as formed from a paradigm which synthesizes a form with correct segments and tones from elements relating to person/ number, tense and stem . This is disti nguished from a suprasegmental tone matrix and mapping rules.
KEYWORDS: Lango, Nilotic, Nilo-Saharan, East Africa, domain of tone, segmental tone, tone sandhi, downstep, consonant types and tone, application of phonological rules, morphotonology

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9327

Mai, Tran Huong (1967) "Tones and Intonation in South Vietnamese" Linguistic Circle of Canberra Publications, Series A-Occasional Papers. 9, pp. 19-34
NOTES: Papers in Southeast Asian Linguistics No. 1.
ABSTRACT: An acoustical investigation of pitch contours of words in isolation and in combination with other words in connected speech.
KEYWORDS: Southeast Asia, Viet, Vietnamese, intonation and tone, instrumental study of tone

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9328

Maingard, L. F. (1957) "Three Bushman Languages: 1" African Studies. 16.1, pp. 37-71
ABSTRACT: Notes on a !Khung dialect include recognition of a tonal system with five distinct levels.
KEYWORDS: Khoisan, !Khung, Southern Africa, level tones

9329

Mak, Cornelia, (1950) "A Unique Tone Perturbation in Mixteco" IJAL. 16.2, pp. 82-86
ABSTRACT: In the San Miguel el Grande dialect of Mixtec tone perturbations usually
result in the substition of high tone for low or mid. In one case, following verbs meaning 'go' used as auxiliaries, mid-mid verbs are perturbed to low-mid. Limitations on this process and possible reasons for its occurrence are discussed.
KEYWORDS: tone rules, morphotonology, syntactic structure and tone, Central America, Mixtec, Mixtecan, Otomanque an

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9330

Mak, Cornelia (1953) "A Comparison of Two Mixtec Tonemic Systems" IJAL. 19.1, pp. 85-100

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ABSTRACT: Mak describes the tonal system of the Mixtec dialect of San Esteban atat Lahuca (SE) with reference to the dialect of San Miguel el Grande (SM) described elsewhere by Pike. Se has 4 level tonemes, SM has 3. SE permits sequences of tones on a syllable, SM doesn't. Tone perturbations are generally downward in se, but upward in SM and their direction may be progressive or regressive in SE, only progressive in SM. Mak describes the tone perturbations in terms of the action of morpheme types and basic tone classes. In SE no tone couplet is stable and many perturbations depend on syntactic position. In SM morphemes with a high (except in the pattern low-high) are stable, perturbations are less
variable and syntactic position is rarely relevant.
KEYWORDS: tone rules, elicitation of tone, tone correspondences, morphotonology, syntactic structure and tone, Mixtec, Mixtecan, Otomanguean, Central America

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9331

Mak, Cornelia (1958) "The Tonal System of a Third Mixtec Dialect" IJAL. 24.1, pp. 61-70
ABSTRACT: Mak adds to previous descriptons of Mixtec tone, a third dialect with 3 level tones that of Santo Tomas Ocotepec. Tonal perturbations only occur
in ST in various noun + modifier constructions. Details of these perturbations are discussed. Discussion of the morphophology of the verb
includes postulating a zero morpheme which perturbs the basic verb tones to form the continuative. In contrast to other dialects pronoun enclitics do not take part in the perturbations of tone but aresometime s subject to simple assimilatory rules.
KEYWORDS: floating tones, tone rules, tone correspondences morphotonology, syntactic structure and tone, Central America Mixtec, Mixtecan, Otomangue an

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9332

Maran, La Raw (1971) "A Note on the Development of Tonal Systems in Tibeto-Burman" Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics. 2, pp. 1-24
NOTES: Paper presented at 2nd Annual Meeting on Sino-Tibetan Reconstruction, Columbia University, 1969.
ABSTRACT: Proposes a theory of development of tonal systems in Tibeto-Burman. Specifically, considers depletion of syllable-final segments, relationship between syllable-final segments in Archaic Burmese and synchronic tones, issues regarding nature of sound change.
KEYWORDS: tonal development, consonant types and tone, nature of sound change, tone features, Tibeto-Burman, Burmese, Jingpho, Southeast Asia

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9333

Maran, La Raw (1971) Burmese and Jingpho: a Study of Tonal Linguistic Processes. Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics.
Volume 4.
ABSTRACT: Maran explores the historical development of tones and their phonological status and formal representation within generative phonology. He does, however, redefine [voiced] and [distributed] and adds [spread], [constricted], [raised], [lowered], and [rest]. Fricatives are nondistributed stridents; affricates are distributed stridents. His major claim is that, for Burmese and Jingpho, tones are absent in the underlying lexical representations; they can be predicted from the postvocalic syllable-final consonant. He includes a brief survey of previous studies of Burmese tones; syllable-final consonants and tones in other Tibeto-Burman languages - Maru Kachin, Jinghpaw Kachin, Atsi Kachin, Rawang, Lahu, Akha, and Lisu. Maran notes a significant correlation between tone and syllable-final consonants; tone and syllable-final consonants perform the same function. Tones arise through the reduction, or eventual loss, of permitted syllable-final consonants. He claims that contour tones will only appear in languages that severely restrict syllable-final consonants. All underlying tones are stationary. According to Maran, tones are produced by adding appropriate manner of production features to the specification of segments where spontaneous voicing is possible.
KEYWORDS: Southeast Asia, Tibeto-Burman, Burmese, Jingpho, tonal development, tone features, contour tones, tonogenesis, Kachin, consonant types and tone

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9334

(1973) "On Becoming a Tone Language: a Tibeto-Burman Model of Tonogenesis" Consonant Types and Tone. Hyman, Larry (ed.) Linguistics Program, University of Southern California, Los Angeles. pp. 97-114
KEYWORDS: Tibeto-Burman, Southeast Asia, tonogenesis, consonant types and tone, Kachin, Lolo-Burmese

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9335

Mase, Hideo (1971) "Syllable and Accent in Japanese" Annual Report of the Institute of Phonetics, University of Copenhagen. 5, pp. 123-152
KEYWORDS: Japanese, syllables, domain of tone, pitch accent Far East

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9336

Matisoff, James (1972) The Loloish Tonal Split Revisited. Center for South and Southeast Asia Studies, University of California, B erKeley. 44 pp.
NOTES: Research Monograph 7 - Research Monograph Series of the Center for South
and Southeast Asia Studies. Revised and expanded version of "The Tonal Split in Loloish Checked Syllables" . Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics, 2, University of Illinois, 1971.
ABSTRACT: One of the most striking points of divergence between the Burmish and loloish branches of Lolo-Burmese is the fact that Burmese checked syllables are all under the same tone while almost all the Loloish languages show a two- or three-way tone con trast in checked syllables. Matisoff hypothesizes that Proto-Lolo-Burmese had no tone-contrast in checked syllables and that the phonetic nature of consonants in syllable-initial position triggered these tone splits after the Loloish branch had separated from the parent language. With two exceptions, higher tonal reflexes are shown to develop from Proto-Loloish checked syllables with voiceless initials and lower
tonal reflexes from Proto-Loloish checked syllables with voiced initials. Interaction between prefixal consonants and root-initial consonants is also shown to have had an influence on tonal development in the Loloish languages. Also included is a list of about 200 etymons and their reflexes in Loloish languages.
KEYWORDS: Southeast Asia, Tibeto-Burman, tonal development, tone splitting, tonogenesis, consonant types and tone, Lolo-Burmese

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9337

Matisoff, James (1973) "Tonogenesis in Southeast Asia" Consonant Types and Tone. Hyman, Larry (ed.) University of Southern California Linguistics Program, Los Angeles. pp. 71-95
NOTES: Paper presented at a symposium on consonant types and tone; March 9-10, 1973; at University of Southern California, Los Angeles.
ABSTRACT: Matisoff discusses the role of laryngeal final consonants and syllable-initial voicing versus voicelessness in tonal development, the interrelationship between monosyllabicity, intersegmental feature-sharing, and compensatory tone. A brief overview of the present state of knowledge about the tonal situation for Proto-Sino-Tibetan and Proto-Tibeto-Burman, followed by some thoughts on the areal diffusion of tones in Southeast Asia and the utility of tone-systems for the establishment of genetic relationship among languages are given.
KEYWORDS: China, Southeast Asia, Tai, tone splitting,

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tonogenesis, Vietnamese, Jingpho, Sinitic, tonal development consonant types and tone, Tibeto-Burman

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9338

McCawley, James (1968) The Phonological Component of a Grammar of Japanese. Mouton, the Hague. 206 pp.
Reviewed By: Okuda, Kunio. Language, 46.3: 736-753. 1970. and Shibatani, Masayoshi. Project on Linguistic Analysis, 2nd Series. 17: 127-143. 1973.
NOTES: Revised version of McCawley's MIT dissertation - The Accentual System of
Standard Japanese 1965. Monographs on Linguistic Analysis, No. 2.
ABSTRACT: This is the first book-length description of contemporary Japanese within the framework of generative phonology. It is intended for linguists who are interested in generative phonological theory in general, and for serious students of Japanese. The first chapter contains a general survey and discussion on the notion of a grammar, the function and structure of a phonological component, the form of phonological rules, the evaluation measure, boundaries, and the syllable and mora. The second chapter contains a detailed treatment of segmental phonology. The third chapter treats the accentuation system of Tokyo Japanese, covering the question of the accentual information recorded in lexical entries, as well as the accent placement rules for converting underlying representations of utterances into their phonetic form. McCawley argues that standard Japanese is a mora-counting syllable language in which the syllable and the mora function as the prosodic unit and the unit of phonological distance, respectively. Appendix i lists morphemes which yield unaccented compounds when used as final element; appendix ii presents a short survey of the accentual systems in various dialects.
KEYWORDS: Far East, Japanese, evaluation measures, boundaries, syllables, mora, form of phonological rules, application of phonological rules, domain of tone

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9339

McCawley, James (1970) "Some Tonal Systems that Come Close to Being Pitch Accent Systems but Don't Quite Make It" Papers from the 6th Regional Meeting, Chicago Linguistic Society. 6, pp. 526-532
ABSTRACT: In a paper in 1964 McCawley proposed 2 criteria for distinguishing between pitch in a true 'tone language' and pitch in a 'pitch accent language' that had to do with how pitch was specified in underlying lexical representations
and what kinds of phonological rules affect pitch. This paper explores the inadequacies of that proposed typology.

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KEYWORDS: tone typology, Japanese, Ijo, West Africa, tone rules, tone sandhi, pitch accent, Ganda, Narrow Bantu, downstep, Benue-Congo, Kwa, Far East

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9340

McCawley, James (1970) "A Note on Tone in Tiv Conjugation"
ABSTRACT: McCawley recasts Arnott's 1960 analysis of Tiv conjugation to permit a single basic formula to cover the tonal pattern of each tense-aspect form regardless of the syllabic structure of the verb root. Although for some tenses two basic patterns have to be posited, the resulting simplification of verb paradigms is substantial.
KEYWORDS: Tiv, floating tones, downstep, morphotonology, Bantoid, West Africa, Benue-Congo, tone rules, suprasegmental tone

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9341

McCawley, James (1973) "Some Tonga Tone Rules" A Festschrift for Morris Halle. Anderson, Stephen and Paul Kiparsky (eds.) Holt, Rinehart and Winston, New York. pp. 140-152
ABSTRACT: Accepting Meeussen's view that morphemes in Tonga can be regarded as neutral or determinant and surface high tones appear mainly on those neutral syllables between determinants, McCawley argues that determinants are underlying high tones and attempts to formulate tone rules that will account for verb tenses. An alternative possible analysis in terms of placement of a tonal accent is briefly sketched.
KEYWORDS: pitch accent, tone rules, Tonga, Southern Africa, Narrow Bantu, Benue-Congo

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9342

McCawley, James (1973) "Global Rules and Bangubangu Tone" Studies in Generative Phonology. Kenstowicz, Michael and Charles Kisseberth (eds.) Mouton, the Hague. pp. 160-168
KEYWORDS: tone rules, application of phonological rules, Bangubangu, Central Africa, Benue-Congo, Narrow Bantu

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9343

Mckaughan, Howard (ed.) (1973) The Languages of the Eastern Family of the East New Guinea Highland Stock. University of Washington Press, Seattle. 817 pp.
NOTES: Anthropological Studies in the Eastern Highlands of New Guinea, (Watson, James, ed) Volume 1.
ABSTRACT: Reprints papers on these languages by members of the

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Summer Institute of
Linguistics.
KEYWORDS: New Guinea, Awa, Auyana, UsarUfa, Gadsup,
Agarabi, Waffa, Binumarien, Tairora, Afaqina, east New Guinea
Highland Stock

9344

Mclendon, Sally (1973) Proto-Pomo. University of California
Press, Berkeley. 113 pp.
NOTES: Univeristy of California publications in Linguistics 71
ABSTRACT: Includes a
summary of the prosodic systems of the seven Pomo languages
(spoken in California) some of which are tonal (or have pitch
accent) and contains a
summary of changes that may have occurred from
Proto-Pomo to the daughter languages on pp 33-5. The extensive
reconstructed vocabulary includes
the pitch-accent.
KEYWORDS: tonal development, pitch accent, Pomo, Hokan,
North America, Kashaya

9345

Meeussen, A. E. (1954) "The Tone of Prefixes in Common Bantu",
Africa. 24, pp. 48-54
ABSTRACT: Nominal prefixes in Common Bantu, as shown by
Greenberg, have low tone. Pronominal prefixes have high tone
except in classes 1 and 9. Verbal prefixes carry low tone for the
1st and 2nd person, high for the third in all classes. Examples
and extensive bibliography are given.
KEYWORDS: Narrow Bantu, Benue-Congo, Central Africa, tonal
development

9346

Meeussen, A. E. (1958) "Morfotonologie Van De Vervoeging in Het
Suthu" Zaire. 12.4, pp. 383-92
ABSTRACT: Meeussen presents morphotonological rules and an
analysis into morphological elements of the verbal system of
southern Sotho.
KEYWORDS: Sotho, Southern Africa, morphotonology, Narrow
Bantu, Benue-Congo, tone rules,

9347

Meeussen, A. E. (1960) "Le Ton De L'infixe En Bantou" Aequatoria.

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[illegible], pp. 110-135
ABSTRACT: Compares the tones on the object concord infixes of many Bantu languages. Apart from languages with no infixes or infixes whose tone is determined by tones elsewhere, the languages divide into those in which all infixes have the same tone (low, except in tonally inverted languages) and those in which there is a difference between the personal singulars (class one) and the rest. Meeussen argues that it is more probable that the infixes would become uniform than that uniform tone would become split into high and low, and therfore concludes that class 1 infixes had low tone originally while the rest had high tone.
KEYWORDS: tonal development, Narrow Bantu, East Africa, Central Africa, Southern Africa

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Meeussen, A. E. (1961) "Le Ton Des Extensions Verbales En Bantou" 9348
Africa. 10.2, pp. 424-427
ABSTRACT: In many Bantu languages all verbal extensions share the same tone as the final vowel. A few cases however causative[-i-]and passive [-w-] have high tone when the final is low, and some relative forms with a high final vowel have low tone extensions as in the nonrelatives. Meeussen argues that these facts permit reconstruction of the majority of verbal extensions as originally low toned, and subject to raising when followed by a high tone final or a morpheme whose first tone was high.
KEYWORDS: Narrow Bantu, East Africa, Southern Africa, Central Africa, tonal development, tone rules

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Meeussen, A. E. (1962) "De Tonen Van Subjunktief En Imperatief in 9349
Het Bantoe" Africana Linguistica. (Tervuren). 1, pp. 57-74
KEYWORDS: Narrow Bantu, Benue-Congo, tonal development, east Africa, Central Africa, Southern Africa,

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Meeussen, A. E. (1963) "Morphotonology of the Tonga Verb" Journal 9350
of African Languages. 2.1, pp. 72-92
ABSTRACT: Meeussen presents a morphophonological analysis of the tones in Tonga verb conjugation based on an underlying contrast of 'neutral' and 'determinative' tones and rules for their realisation in surface high or low tones.
KEYWORDS: Tonga, Central Africa, Narrow Bantu, Benue-Congo, morphotonology, tone rules, neutral tone

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9351
Meeussen, A. E. (1965) "A Preliminary Tonal Analysis of Ganda Verb Forms" Journal of African Languages. 4.2, pp. 108-113
ABSTRACT: Meeussen presents a preliminary attempt to assign fundamental (underlying) high or low tones to stems and affixes in the LuGanda verb system together with manifestation rules that derive surface forms.
KEYWORDS: Narrow Bantu, East Africa, Benue-Congo, tone rules morphotonology, Ganda

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9352
(1966) "Syntactic Tones of Nouns in Ganda: Linguistic Research in Belgium. Lebrun, Y. (ed.) Universa, Wetteren. pp. 77-86
KEYWORDS: morphotonology, syntactic structure and tone, Ganda, East Africa, Narrow Bantu, Benue-Congo

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9353
Meeussen, A. E. (1970) "Tone Typologies for West African Languages" African Language Studies. 11, pp. 266-271
ABSTRACT: Meeussen proposes a typology of tone systems for West African languages
which involves the number of tones and the application of rules of downdrift, downstep, upstep, total downstep (higher tone lowered to be equal with a preceeding lower one).
KEYWORDS: tone typology, West Africa, Kwa, Chadic, downstep tone rules, Benue-Congo

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9354
Meeussen, A. E. (1971) "Zur Morphotonologie Des Yaka" Afrikanische Sprachen Und Kulturen - Ein Querschnitt. Six, Veronika, et al. (eds.) Deutsches Institut Fur Afrika-forschung, Hamburg. pp. 125-131
KEYWORDS: Yaka, Narrow Bantu, Benue-Congo, Central Africa, morphotonology

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9355
Meeussen, A. E. (1974) "Notes on Tone in Ganda" Bulletin of the School of Oriental and African Studies, London. 37.1, pp. 148-156
ABSTRACT: Meeussen uses Stevick's 1969 analysis of Ganda tone to propose an analysis in terms of underlying formatives and ordered rules. 17 rules are discussed (some are 'natural' phonological rules, others morphophonemic), formalized and exemplified with derivations.

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KEYWORDS: Ganda, tone rules, morphotonology, Benue-Congo, Narrow Bantu, East Africa, floating tones

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9356

Meeussen, A. E. (1974) "A Note on Global Rules in Bangubangu Tone" Studies in African Linguistics. 5.1, pp. 95-100
ABSTRACT: Meeussen shows that at least some of the global rules proposed by McCawley 1973 for Bangubangu tone can be local and casts doubt on the others. Meeusen concludes with further suggestions for the analysis of Bangubangu tone.
KEYWORDS: application of phonological rules, tone rules, Bangubangu, Central Africa, Benue-Congo, Narrow Bantu

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9357

Meeussen, A. E. and D. Ndombe (1964) "Principes De Tonologie Yombe (Kongo Occidental)" Journal of African Languages. 3.2, pp. 135-161
ABSTRACT: This article discusses the limitations on tone sequences on nouns, adjectives etc. And the morphotonology of verbal forms which are summmarized in formulae for each tense.
KEYWORDS: Yombe, Narrow Bantu, Central Africa, Benue-Congo, morphotonology

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9358

Merrifield, William (1963) "Palantla Chinantec Syllable Types" Anthropological Linguistics. 5.5, pp. 1-16
ABSTRACT: All syllables in Palantla Chinantec occur with one of 3 tone phonemes - high, mid, or low, or with 2 of these tone phonemes in sequence - low-mid, low-high, or high-low. Allophones of the
phonemes occur in relation to the syllable type, the presence of a glottal catch in the syllable peak, and the position of the syllable within the utterance.
KEYWORDS: Central America, Mixtecan, Palantla Chinantec, tone distribution

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9359

Meyer-Eppler, W. (1957) "Realization of Prosodic Features in Whispered Speech" Journal of the Acoustical Society of America. 29.1, pp. 104-106
NOTES: Reprinted in Readings in Acoustic Phonetics, edited by Ilse Lehiste, 180 -182. MIT Press, Cambridge. 1967.
ABSTRACT: Experiments utilizing a visible-speech analyzer showed that changes of pitch in normal (voiced) speech are replaced in

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whispered speech by shifts of some formant regions accompanied by added noise between the
higher formants.
KEYWORDS: whispered speech

9360

Meyers, Laura (1974) "Tone Patterns in Hausa: a Re-analysis of Hausa Downdrift" Working Papers in Phonetics, University of California, Los Angeles. 27, pp. 47-62
ABSTRACT: Meyers shows, with experimental evidence to confirm this, that downdrift,
in Hausa is the product of assimilatory and intonational processes. A string of like tones is lowered progressively by an intonational like-tone-lowering rule. High tone following low is often lowered to be equal to the preceding low tone by an assimilatory rule called high destruction. It is also shown that a rule of high-tone raising operates to raising the last high tone proceed in a low tone this is believed to occur in order to maximize the distinction between the tones.
KEYWORDS: tone rules, downdrift, Hausa, Chadic, West Africa

9361

Miao Language Team (1972) "A Brief Description of the Miao Language" Miao and Yao Linguistic Studies. Herbert C. Purnell, Jr. (ed.) Southeast Asia Program, Cornell University, Ithaca, New York. pp. 1-25
NOTES: Contains selected articles in Chinese translated into English by Chang Yu-Hung and Chu Kwo-Ray. Data Paper No. 88, Linguistic Series VII.
KEYWORDS: tone sandhi, consonant types and tone, Miao, Miao-Yao, China

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9362

Miller, John (1961) "Word Tone Recognition in Vietnamese Whispered Speech" Word. 17.1, pp. 11-15
ABSTRACT: Results show that very little word tone is transmitted in Vietnamese whispered speech. Any meaning conveyed in whispered speech is due almost entirely to context.
KEYWORDS: Southeast Asia, tone perception, Vietnamese, whispered speech, Viet

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9363

Miller, Wick (1959) "Spanish Loanwords in Acoma" IJAL. 25.3, pp.

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147-153
ABSTRACT: Provides a list of New Mexico Spanish phonemes and a more detailed description of the phonemic system of Acoma, including phonemes and their distributions, tonal accents, syllable shapes, and morphophonemic alternations. Enumerates and exemplifies rules of substitution for the Acoma borrowing of Spanish words dealing with single consonants, consonant clusters, stress, vowels (stressed and unstressed), and morpheme structure. Exceptions to these are noted. Included is a list of loanwords with Spanish models,
Acoma forms, and English translations.
KEYWORDS: North America, Acoma, Keres, Sitsime, loanwords, stress and tone, phonemic analysis

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9364

Miller, Wick (1965) Acoma Grammar and Texts. University of California Press, Berkeley. 259 pp.
NOTES: University of California Publications in Linguistics, Volume 40.
ABSTRACT: The Keres dialect of Acoma Pueblo, New Mexico, is described with 3 'tonalaccents' (high, falling and glottal). For these accents, pitch is regarded as the main feature and unaccented voiced syllables have low pitch. The falling and glottal accents are 'phonetically similar' and only occur with vowel clusters except for one rare environment. In the sections on morphophonemics, rules of accent loss, accent ablaut and many adjustments involving glottalized consonants, a morphophoneme of glottalization, vowel length and changes of accent are discussed.

KEYWORDS: stress and tone, morphotonology, consonant types and tone, vowel length and tone, Acoma, Keres, North America, Sitsime

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9365

Mirt, Heide (1971) "Zum Morphologie Des Verbalkomplexes in Mandara" Afrika Und Ubersee. 54.1-2, pp. 1-76
ABSTRACT: Mirt presents an analysis of the verbal morphology of Mandara based on data collected by Lukas in Cameroons and Nigeria. Two tones are assumed and tonal variations play a role in the morphology.
KEYWORDS: morphotonology, Mandara, Chadic, West Africa

9366

Mohr, Burckhard (1971) "Intrinsic Variations in the Speech Signal" Phonetica. 23.1, pp. 65-93
ABSTRACT: Paper offers evidence for relationship between pitch

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and duration and other properties of certain sounds and classes of sounds. Assumptions about laryngeal control - specifically, control over the width of the glottis - about the timing of laryngeal activity with respect to the activity of supraglottal articulators, and about the relationsip between subglottal and supraglottal pressure, prove to be sufficient to explain the observed variations of some of the acoustical parameters of human speech. The relevance of these intrinsic cues is discussed both in terms of speech perception and in terms of possible explanations for certain sound changes.
KEYWORDS: instrumental study of tone, acoustics, consonant types and tone, pitch control, larynx, Foochow, China, Sinitic, vowel height and tone, intrinsic pitch of vowels

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9367

Mohr, Burckhard (1973) "Tone Rules and Phonological Representation of Tones" California State University, Dominguez Hills.
NOTES: Paper presented at 6th International Conference on Sino-Tibetan Languages and Linguistics, San Diego.
ABSTRACT: Suggests linguistic processes involving tones are of two types: tones interact independent of segments over which tones occur; tones interact dependent on segments in strings. Concludes with Leben 1971 that tones must be suprasegmental on some levels of analysis, but segmental on others. Arguments for first type of linguistic process primarily based on fact that tone should not have to specify sequences of segments (e.g. C or V) in rules.
This is not real argument since a convention in theory can state that when a rule only refers to tones other segmental information may or may not be present, i.E. like convention on '+'. Argument is therefore a pseudo-argument, including mapping conventions proposed. Data interesting, however.
KEYWORDS: Southeast Asia, segmental tone, suprasegmental tone mapping conventions, tone rules

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9368

Morse, Robert (1963) "Phonology of RaWang" Anthropological Linguistics. 5.5, pp. 17-41
ABSTRACT: Morse claims four tonemic distinctions occur in Rawang, involving 3 pitch registers and a neutral noncontrastive tone. Includes a nice summary of some general characteristics of Sino-Tibetan tonal systems on pp. 35-6.
KEYWORDS: Rawang, Tibeto-Burman, Southeast Asia, Kachin, neutral tone

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9369

Mortier, Rodolf (1948) "Methode Voor Het Aanleren Der Tonen in Een Toontaal Toepassing Op Het Ngbandi" Aequatoria. 1948.4, pp. 137-143
NOTES: In two parts. Part 2 is in Aequatoria 1949.4 pp. 138-144
ABSTRACT: In discussing methods by which a 'European' could learn the tones of a language such as Ngbandi, mortier presents a large number of insights into the distribution of tones in the language. Some of these are 'semantic rules' such as 'raising of tone seems to indicate a highlighting of a person or thing' (monosyllabic nouns), but others are statistical distributions, or combinations of statistical and phonological factors - e.g. disyllabic nouns with medial liquids and like vowels are mainly mid-mid; with unlike vowels, on the other hand, where the only possible medial liquid is /l/ the majority are high -mid. Mortier includes examples of ideophones, dividing them into two types with low-low and high-low tone patterns. the first include words referring to 'regular movements' and referring to women, children, etc.; the second refers to heavy broken movements. The article concludes with a list of the most common words arranged according to tone and syllable numbers.
KEYWORDS: Central Africa, ngBandi, tone distribution, tonal iconism, pedagogy, adamawa-eastern

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9370

Newman, Roxana Ma (1971) "Downstep in Ga'anda" Journal of African Languages. 10.1, pp. 15-27
ABSTRACT: The purpose of this paper is to account for the extensive downstep phenomena in Ga'anda. Ga'anda is said to have three discrete level tones in conjunction with downstep and downdrift. The analysis is based on the theoretical assumption that downstep and downdrift are both surface structure phenomena and that they can be derived by an ordered set of rules which require only the three discrete level tones as primitives in the deep structure.
KEYWORDS: downdrift, downstep, level tones, syllables, syntactic structure and tone, tone features, tone rules, Ga'anda, Chadic, West Africa

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9371

NKongola, Muyumba and Ian Maddieson (1973) "Luba Tonology and the Development of Downstep" University of Indiana, Bloomington.
NOTES: Paper presented at 4th African Linguistics Conference, New York, 1973.
ABSTRACT: This paper shows the mid tone of Burssen's analysis of Ciluba to be a downstepped high tone. Rules for pitch assignment and vowel deletion are formulated to account for this tone in the environments in which it occurs. Finally it is suggested that

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lexical downsteps, in languages such as Akan, might be historically derived in nouns from vowel-initial stems with low -high tone pattern preceded by a high tone prefix.
KEYWORDS: Lulua, downdrift, downstep, tonal development, tone rules, Narrow Bantu, Benue-Congo, Central Africa

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9372
Nonnenmacher-pribic, Elisabeth (1961) Die BaltoSlavischen Akzent- Und Intonationsverhaltnisse Und Ihr Quantita Tiver Reflex Im Slovakischen. Harrassowitz, Wiesbaden. 196 pp.
KEYWORDS: Baltic, Slavic, slovak, tonal development, stress and tone, intonation and tone, pitch accent, Europe

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9373
Oatridge, Des and Jennifer Oatridge (1966) "Phonemes of Binumarien" Linguistic Circle of Canberra Publications, Series A. 7, pp. 13-21
NOTES: Papers in New Guinea Linguistics No. 5. Reprinted in McKaughan 1973 pp. 517-522.
ABSTRACT: This paper describes the phonology of Afaqina (known as Binumarien officially). Two level tones are recognised and variations are assigned to intonation of a downdrift type. A final low, however, appears as a slight rise on a lengthened vowel. Restrictions on tone sequences are also described.
KEYWORDS: downdrift, intonation and tone, Binumarien, new Guinea, afaqina, East New Guinea Highland Stock

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9375
Chala, John (1973) ""he Physiology of Tone" Consonant Types and Tone. Hyman, Larry (ed.) Linguistics Program, University of Southern California, Los Angeles. pp. 1-14
NOTES: Southern California Occasional Papers in Linguistics No. 1.
KEYWORDS: consonant types and tone, speed of pitch change, larynx, instrumental study of tone, acoustics, physiology, pitch control

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9376
Ohman, Sven (1967) "Word and Sentence Intonation: a Quantitative Model" Speech Transmission Laboratory Quarterly Progress and Status Report, Royal Institute of Technology, Stockholm. 2-3, pp. 20-54
ABSTRACT: Describes a quantitative model of larynx control during speech production. Input commands are configurations of simple

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step functions fed to the
model over two channels, the sentence intonation filter and the word intonation filter. Model was tested against the Scandinavian grave/acute accent opposition by a comparison of pitch curves generated with themodel to empirically measured fundamental frequency contours. It was found that the salient features of these intonation patterns in simple utterances of a number of dialects can be simulated by means of a single positive step as input to the sentence intonation filter and an appropriately timed negative pulse as input to the word intonation filter. Hypotheses were proposed as to how the model elements are to be interpreted in physiological terms. In this connection, possible energy-conserving principles regarding the phonological phrase as a whole were considered. Also a synthesis strategy for sentence intonation was
discussed. Consideration of Scandinavian accentual oppositions and the known facts of Scandinavian linguistic history suggest a hypothesis about the origin
of the word tone distinction.
KEYWORDS: syllables, Swedish, larynx, Germanic, speech synthesis, domain of tone, acoustics, pitch control, intonation and tone, physiology, tonogenesis, tonal development consonant types and tone, Europe

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9377

Oswalt, Robert (1964) "A Comparative Study of Two Pomo Languages" Studies in Californian Linguistics. Bright, William University of California Press, Berkeley. pp. 149-162
ABSTRACT: Includes discussion of the rise of a 'phonemic high tone' in central and
southwestern Pomo apparently from an earlier predictable pitch accent.
KEYWORDS: pitch accent, tonal development, Pomo, Kashaya, central Pomo, Hokan, North America

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9378

Palakornkul, A. (1971) "Some Linguistic Games in Thai" Penn-texas Working Papers in SocioLinguistics. 2, pp. 25-31
ABSTRACT: Thai word games which involve shifting of segments and tone aredescribe d. Some observations about the structure of Thai are made based on the word games.
KEYWORDS: Siamese, language games, segmental tone, suprasegmental tone, syllables, Tai, Southeast Asia

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9379

Palmer, Adrian (1969) "Thai Tone Variants and the Language

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Teacher" Language Learning. 19.3-4, pp. 287-299
ABSTRACT: This paper attempts to show how the phonetic shape of the Thai tones is influenced by the tone of the preceding and following syllable. Narrow-band spectrograms were made of a set of 25 sentences read by a native Thai speaker. Each sentence consisted of four
monosyllabic words; the middle two words were varied to give all possible two-tone combinations. The results of the experiment show that a single tone, except for the high tone, is relatively unaffected by changes in the tone of the preceding or following syllable. When high tone is preceded by either mid, low, or falling tones, it has a rising contour; when preceded by high or rising tone, it has a falling cont our. Tone contrasts are neutralized only by changes in the tone of the preceding syllable. When preceded by a low tone, the contrast between mid and low tone is 'completely' neutralized. Other cases of 'near' neutralization are also discussed.
KEYWORDS: tone sandhi, pedagogy, instrumental study of tone, Southeast Asia, Tai, Siamese

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9380
Palmer, John and Dominic Larusso (1965) Anatomy for Speech and Hearing. Harper and Row, New York. 216 pp.
ABSTRACT: Chapter 5, pp.) 5-122, gives anatomical description of the laryngeal region with illustrations.
KEYWORDS: larynx, pitch control, physiology

9381
Parmenter, C. S. Trevino, and C. Bevans (1933) "The Influence of a change in Pitch on the Articulation of a Vowel" Language. 90.1 pp. 72-81
ABSTRACT: It has frequently been suggested that a rise in pitch is accompanied by changes in the position of the supraglottal organs of speech. This, paper presents the result of an x-ray investigation of the differences in the articulation of vowels pronounced on low pitch and high pitch. Three subjects, speaking English, French and Spanish respectively, were used. Results showed considerable modifications in higher pitched vowels, including lip and tongue adjustments not easily explained as due to an observed raised position for the larynx.
KEYWORDS: pitch control, intrinsic pitch of vowels, larynx, vowel height and tone, radiography, English, French, Spanish, Romance, Germanic, Europe

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9382
Peterson, Gordon and Harold Barney (1952) "Control Methods Used in

a Study of the Vowels" Journal of the Acoustical Society of America. 24.2, pp. 175-184
NOTES: Reprinted in Readings in Acoustic Phonetics, edited by Ilse Lehiste, 118 -127. MIT press, Cambridge, Massachusetts. 1967.
ABSTRACT: Contains averages of fundamental frequencies of 10 vowels as spoken by 76 speakers of American English. See Table II, page 183.
KEYWORDS: vowel height and tone, intrinsic pitch of vowels, English, Germanic, Europe

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9383

Pike, Eunice (1948) "Problems in Zapotec Tone Analysis" IJAL. 14.3, pp. 161-170
ABSTRACT: In the Villa Alta dialect of Zapotec three tone registers are found but an asymmetrical set of combinations occurs due to the operation of rules
of various kinds or the existence of general constraints on sequences. Methodologial suggestions are offered to help elicit and understand systems of the same type.
KEYWORDS: tonal analysis, elicitation of tone, tone rules, Central America, Zapotec, Otomangue an

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9384

Pike, Eunice (1951), "Tonemic - Intonemic Correlation in Mazahua (Otomi)" IJAL. 17.1, pp. 37-41
ABSTRACT: Pike discusses two separate pitch systems in the mazahua dialect of Otomi. Three tonemes, high, low and falling, are recognized as well as three 'intonemes', high (higher than high tone), mid and low, and a number of intonation morphenes. Roots carry tonenemes while intonemes only occur word-finally on suffixes, enclitics etc. Finally it is suggested that some apparently asymetricaltone systems reported for these languages may be the result of similar dual pitch systems.
KEYWORDS: intonation and tone, Otomi, Otomanguean, central America, techniques for tonal analysis

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9385

Pike, Eunice (1956) "Tonally Differentiated Allomorphs in Soyaltepec Mazatec" IJAL. 22.1, pp. 57-71
ABSTRACT: This article describes the progressive and regressive tone perturbations
found in the Soyaltepec dialect of Mazatec. This dialect has four tone levels and various tone sequences on single syllables. Since tones are subject to perturbations there are problems in deciding the basic tones. Phonetic influence of consonant types is also discussed.

KEYWORDS: tone rules, tone sandhi, consonant types and tone, tonal analysis, Mazatec, Mazatecan, Otomanguean, central America

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9386

Pike, Eunice and John Cowan (1967) "Huajuapan Mixtec Phonology and Morphophonemics" Anthropological Linguistics. 9.5
ABSTRACT: Huajuapan Mixtec is analyzed as having 3 level tones-high, mid, and low.
Numerous examples of tonal alternations are given.
KEYWORDS: Central America, Mixtec, tone sandhi, morphotonology, tone rules, Otomangue an

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9387

Pike, Eunice, (1974) "A Multiple Stress System Versus a Tone System" IJAL. 40.3, pp. 169-175
ABSTRACT: Surveys phonetic characteristics of a multiple stress system as compared
to a tone system, and the problems of deciding on correct analysis.
KEYWORDS: vowel height and tone, stress and tone, consonant types and tone, techniques for tonal analysis

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9388

Pike, Kenneth (1945) "Tone Puns in Mixteco" IJAL. 11.3, pp. 129-139
ABSTRACT: This paper describes a language game played by Mixtec speakers. The game
involves the substitution of one homonym or near-homonym (differing only by tone) for a nother for humorous effects.
KEYWORDS: Mixtec, Central America, language games, Mixtecan Otomanguean,

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9389

Pike, Kenneth (1946) "Another Mixteco Tone Pun" IJAL. 12.1, pp. 22-24
ABSTRACT: Another example is provided of a language game played by the Mixtec, previously described in Pike 1945.
KEYWORDS: Mixtec, Central America, language games, Mixtecan Otomangue an

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9390

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Pike, Kenneth (1946) "Phonemic Pitch in maya" IJAL. 12.2, pp. 82-88
KEYWORDS: mayan, Central America, Yucatec

9391

Pike, Kenneth (1948) Tone Languages: a Technique for Determining the Number and Type of Pitch
Contrasts in a Language with Studies in Tonemic Substitution and Fusion. University of Michigan Press, Ann Arbor.
Reviewed By: Herzog, g. IJAL 15, pp. 236-244. 1949. Trager, George, Journal of English and Germanic Philology 48, pp. 285-286. 1949 Black, John, Quarterly Journal of Speech 34, pp. 519-520. 1948. Li, Fang-Kuei, Language 26.3, pp. 401-403. 1950.
ABSTRACT: Pike discusses basic characteristics and typology of tone languages, steps for determining the number and kind of tonemes in a language and toneeic perturbations in two languages spoken in southern Mexico - Mixtec and Mazatec.
KEYWORDS: tone typology, tone rules, elicitation of tone, Mixtec, Mazatec, Central America, Mixtecan, Popolocan, techniques for tonal analysis, Otomanque an

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9392

Pike, Kenneth (1953) "A Note on Allomorph Classes and Tonal Technique" IJAL. 19.2, pp. 101-105
ABSTRACT: Pike comments on problems raised for the investigator by the differences
between mutually intelligible dialects unexpectedly found to differ substantially in their tonal systems. Data on Mixtec from Cornelia Mak provided different allotones and different tonal perturbations.
KEYWORDS: elicitation of tone, Mixtec, Mixtecan, Otomanque an Central America, morphotonology

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9393

(1967) "Suprasegmentals in Reference to Phonemes of Item, of Process, and of Relation" To Honor Roman Jakobson: Essays on the Occasion of His Seventieth Birthday: Volume 2. Mouton, the Hague. pp. 1545-1554,
ABSTRACT: Downstep and downdrift phenomena in West African languages are used to demonstrateaneed for "process" phonemes as well as "relational" and "particle" phonemes.
KEYWORDS: downstep, downdrift, domain of tone, West Africa

9394

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Pike, Kenneth (1970) "The Role of Nuclei of Feet in the Analysis of Tone in Tibeto-Burman Languages of Nepal" Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics. 3.1, pp. 37-48
KEYWORDS: Tibeto-Burman, Bodic, Indian Subcontinent, domain of tone, consonant types and tone, tone distribution, techniques for tonal analysis

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9395

Pike, Kenneth, Ralph Barrett, and Burt Bascom, (1959) "Instrumental Collaboration on a Tepehuan (Uto-aztecan) Pitch Problem" Phonetica. 3.1, pp. 1-22
ABSTRACT: This article discusses how instrumental studies were able to help focus attention on the necessity of investigating pitch furthur in a case which it had not been clear whether pitch or stress was significant, or both.
KEYWORDS: instrumental study of tone, stress and tone, Tepehua, pitch accent, Uto-Aztecan, Piman, North America, techniques for tonal analysis

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9396

Pike, Kenneth and G. K. Scott (1963) "Pitch Accent and Non-accented Phrases in Fore (New Guinea)" Zeitschrift Fur Phonetik. 16, pp. 179-189
KEYWORDS: Fore, New Guinea, East New Guinea Highland Stock, pitch accent, stress and tone

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9397

Pilszczikowa-chodak, N. (1972) "Tone-vowel Height Correlation and Tone Assignment in the Pattern of Verbs and Noun Plurals in Hausa" Studies in African Linguistics. 3.3, pp. 399-421
ABSTRACT: This paper presents a set of rules for assigning tones in Hausa verbs and noun plurals, and discusses the relationship between the tone and degree of vowel height on the final vowel of these forms. It is shown that the height of tone on the final vowel corresponds with the phonetic quality of the vowel. Final vowels [i u e] co-occur with high tone.
KEYWORDS: Chadic, Hausa, West Africa, tone rules, vowel height and tone, morphotonology

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9398

Pittman, Richard (1970) "Gurung, Tamang, Thakali, Sherpa, and Chepang Prosodies" Occasional Papers of the Wolfenden Society on

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Tibeto-Burman Linguistics. 3.2, pp. 1-8
KEYWORDS: Gurung, Indian Subcontinent, Tamang, tonal development, Thakali, tone correspondences, Sherpa, Chepang, Bodic, Tibeto-Burman

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9399

Pittman, Richard and Jessie Glover (1970) "Proto-Tamang-Gurung-Thakali" Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics. 3.2, pp. 09-22
KEYWORDS: tonal development, Tamang, Gurung, Thakali, Bodic Tibeto-Burman, Indian Subcontinent

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9400

Pride, Leslie, (1963) "Chatino Tonal Structure" Anthropological Linguistics. 5.2, pp. 19-28
ABSTRACT: Chatino is reported to have 4 tone registers that contrast on word-final syllables only. Numerous examples of tonal alternations are given.
KEYWORDS: chatino, Mixtecan, Central America, Otomanguean, tone rules, morphotonology

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9401

Purcell, Edward (1973) The Realization of Serbo-Croatian Accents in Sentence Environments: an Acoustic Investigation. Helmut Buske, Hamburg.
NOTES: Hamburger Phonetische Beitrage 8.
KEYWORDS: Serbo-Croatian, pitch accent, Slavic, Europe, instrumental study of tone, contour tones, intonation and tone,

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9402

Purnell, Herbert (ed.) (1972) Miao and Yao Linguistic Studies. Southeast Asia Program, Cornell University, Ithaca, New York. 255 pp.
NOTES: Data Papers No. 88, Linguistic Series VII.
KEYWORDS: Miao-Yao, consonant types and tone, Miao, Yao, language games, China, tonal development, tone splitting

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9403

Ray, Punya Sloka (1967) "Dafla Phonology and Morphology" Anthropological Linguistics. 9.8, pp. 09-14
ABSTRACT: Dafla, a Tibeto-Burman language spoken in India, is reported to show a phonological sequence unit intermediate

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between a stress group and a syllable,and constrastive pitch shapes on elided or
whispered syllables.
KEYWORDS: Tibeto-Burman, Dafla, Indian Subcontinent, Lolo-Burmese

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9404

Rensch, Calvin Ross (1968) Proto-Chinantec Phonology. Museo Nacional De Antropologia, Mexico City. 122 pp.
NOTES: No. 10 in the museum's Serie Cientifica; No. 4 in the Series Papeles de la Chinantla. Available from Summer Institute of Linguistics. This monograph is a revised version of an M. A. Thesis, University of Pennsylvania, 1963.
ABSTRACT: Twenty-four Chinantec languages or dialects are given in brief phonemic description. Six of them have tonal analyses available, including Usila with five levels. These are used to establish tone correspondences, from which a system of two level tones and three single-syllable sequences (LH, HL, HLH) is postulated for Proto-Chinantec. See pp. 102-108.
KEYWORDS: tonal development, level tones, stress and tone, Chinantec, Otomanguean, Central America

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9405

Richards, Paul (1972) "A Quantitative Analysis of the Relationship Between Language Tone and Melody in a Hausa Song" African Language Studies. 13, pp. 137-161
ABSTRACT: Comparing musical transitions from note to note with tonal transitions from syllable to syllable in the tune and text of a Hausa song, Richards concludes that parallelism between text-tone and melody is decidedly greater than chance. Simulated tone and melodic sequences were compared with the actual patterns in the song to arrive at this conclusion.
KEYWORDS: music and tone, Hausa, Chadic, West Africa

9406

Richardson, Irvine (1959) The Role of Tone in the Structure of Sukuma. School of Oriental and African Studies, University of London. 124 pp.
Reviewed By: Meeussen, A.E. Africa 30:96 1960.
KEYWORDS: Sukuma, Narrow Bantu, Benue-Congo, Southern Africa tone rules, morphotonology

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9407

Robbins, Frank (1961) "Quiotepec Chinantec Syllable Pattering"

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IJAL. 27.3, pp. 237-250
ABSTRACT: Robbins identifies four tone levels in Quiotepec Chinantec and describes
limitations on their occurrence in syllables classed as long or short, checked or unchecked, interrupted (medial glottalization) or not. Two tones may occur together in long or short syllables but three only occur with long syllables. Phonetic variants of tones and sequences of tones are discussed and an alternative solution discussed.
KEYWORDS: vowel length and tone, tone distribution, Chinantec Otomanguean, Central America

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9408

Robinson, David (1968) "Some Acoustic Correlates of Tone in Standard Lithuanian" the Slavic and East Europe an Journal. 12.2 pp. 206-212
ABSTRACT: Pitch and duration data for stressed diphtongs and monophthongs for 1 male subject of standard Lithuanian suggests that pitch is not distinctive. For the diphthongs, the data reveals that relative duration of segments and the vowel quality of the first segment is more significant. For monophthongs, the data reveals no distinctive patterns in fundamental frequency, duration, or formant structure for tone. Suggests that intensity may be the primary physical property.
KEYWORDS: Lithuanian, acoustics, Baltic, vowel length and tone, Europe, pitch accent, instrumental study of tone

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9409

Rombauts, H (1949) "Tonetique Du Lonkonda" Kongo-Overzee. 15.1, pp. 10-23
ABSTRACT: Rombauts focusses on the unusual low tones of noun class prefixes in classes 1,7 and 9 and the high tones for other classes which alternate with rising tone in certain environments. The rising tone is believed to have originated from the low-high pattern of the demonstrative -nesince it never occurs after -ne while neighboring languages (Batwa and Lyembe) show corresponding forms with a demonstrative.
KEYWORDS: nkonda, Central Africa, Narrow Bantu, Benue-Congo tonal development

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9410

Root, Alfred (1930) "Pitch Patterns and Tonal Movement in Speech" Psychological Monographs. 40.1, pp. 109-159
ABSTRACT: Experimental investigation of the relationship between physical and perceptual patterns of tone. Includes discussion of consonantal effects on tone and modes of transition from tone to

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tone.
KEYWORDS: consonant types and ' ne, tone perception, level tones, contour tones, pitch control, physiology

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9411

Rouget, Gilbert (1963) "Le Probleme Du 'Ton Moyen' En Gu" Journal of African Languages. 2.3, pp. 218-221
ABSTRACT: The Ewe dialect of Gu (Egun) has basically two tone levels but a third mid level Occasionally occurs in pronominal forms.
KEYWORDS: Ewe, Gun, West Africa, Kwa, downstep

9412

Rouget, Gilbert (1964) "Tons De La Langue En Gun (Dahomey) et Tons Du Tambour" Revue De Musicologie. 50, pp. 3-29,
ABSTRACT: Three ways of striking the drum correspond to the three levels of tone in Gun. Distinctions between deadened and undeadened notes reproduce the tones without reference to pitch and also reproduce the assymetry of a system in which the mid tone has very low functional yield.
KEYWORDS: drum language, Gun, Ewe, West Africa, Kwa

9413

Rouget, Gilbert (1965) "Analyse Des Tones Du Gun (Dahomey) Par Le 'Detecteur De Melodies' De L' institut De Phonetique De Grenoble (Rapport D'experiences)" Revue 'Langue et Comportement' (Paris). 1, pp. 31-47
KEYWORDS: Gun, Ewe, West Africa, Kwa

9414

Rowlands, E C, (1960) "Tone and Intonation Systems in Brass-Nembe Ijaw" African Language Studies. 1, pp. 137-154
ABSTRACT: Rowlands describes the lexical function of tone, the rules for combining
words into tone groups, and the pitch patterns in sentences. Surface tones are largely determined by context in a tone-group.
KEYWORDS: Ijo, Nembe, Kwa, West Africa, tone rules, intonation and tone, domain of tone

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9415

Russell, Robert (1958) "AlGunos Morfemas De Amahuaca (Pa no) Que Equivalen a La Entonacion Del C astella no" Peru-Idigena. 7.16-17

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pp. 29-33
NOTES: Abstracted by Bright, William IJAL 27.2 p.159, 1961.
ABSTRACT: The Amahuaca language of eastern Peru has two tones on the syllableleve l, but so far as is known has no intonational system. Emphasis, interogation, affection are all expressed by suffixal morphemes.
KEYWORDS: South America, Amahuaca, pa noan

9416

Russell, Robert and Delores Russell (1959) "Syntactotonemics in Amahuaca (Pa no), and Amahuaca Vocabulary" Serie Linguistica Especial, Publicacoes Do Museo Nacional, Rio De Janeiro. 1, pp. 128-170
KEYWORDS: Amahuaca, pa noan, South America, tone rules, syntactic structure and tone, morphotonology

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9417

Rycroft, David (1960) "Melodic Features in Zulu Eulogistic Recitation" African Language Studies. 1, pp. 60-78
ABSTRACT: The melody of Izibongo praise poems is studied in relation primarly to the pitch of normal Zulu speech. Lexical and grammatical contrasts of pitch are still expressed in recitation and depressing consonants are followed by a low notebut downdrift does not occur except phrase-finally. Certain sequences receive a special intonational formula.
KEYWORDS: music and tone, literary style and tone, downdrift consonant types and tone, Zulu, Nguni, Narrow Bantu, Benue-Congo, Southern Africa

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9418

Rycroft, David (1963) "Tone in Zulu Nouns" African Language Studies. 4, pp. 43-68
ABSTRACT: Tones are affected by 'low' consonants, by presence of the initial vowel
in prefixes and by some inflections, but a simiplified analysis can be reached by looking at noun tone patterns with the short prefix. This makes it evident that the high tone of the initial vowel sometimes causes downstep.
KEYWORDS: Narrow Bantu, downstep, Benue-Congo, Southern Africa, Zulu, Nguni, consonant types and tone

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9419

Salzmann, Zdenek (1956) "Arapaho I: Phonology" IJAL. 22.1, pp. 49-56

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ABSTRACT: Two pitch phonemes - high and low - are posited for Northern Arapaho (spoken on Wind River Indian Reservation, Wyoming). Every vowel phoneme is said to carry a pitch phoneme. Lowered variants of each pitch phoneme are noted for phrase-final position.
KEYWORDS: North America, Arapaho, domain of tone, tone rules Algonquian

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9420

Sampat, K S (1964) "Tonal Structure of Majhi" Indian Linguistics. 25, pp. 108-110
ABSTRACT: In the majhi dialect of Punjabi three tones are distinguished. This paper reports on an experiment to determine exact pitch contours for these. The level tone is a fall-rise, rising tone a sharp rise (sometimes falling again) and falling ton a sharp fall (sometimes rising again). Falling tone has the longest duration.
KEYWORDS: Punjabi, Indian Subcontinent, vowel height and tone vowel length and tone, Indo-Iranian

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9421

Sampson, Geoffrey (1969) "A Note on Wang's Phonological Features of Tone" TJAL. 45.1, pp. 62-66
ABSTRACT: In this note Sampson proposes the 3 tone features [high], [central] and [low] to avoid difficulties encountered with Wang's [mid] feature. Based on some evidence in Peking Chinese he further suggests that features of amplitude or loudness contour must be taken into account to deal adequately with tone.
KEYWORDS: China, Mandarin, Sinitic, tone features, Pekinese

9422

Sampson, Geoffrey (1974) "Is There a Universal Phonetic Alphabet?" Language. 50.2, pp. 236-259
ABSTRACT: Sampson attempts to disprove the hypothesis that there is a finite universal set of phonetic features. Using tonal evidence from Ha noi Vietnamese it is claimed that the set of possible distinct tones cannot be finite.
KEYWORDS: Southeast Asia, Viet, Vietnamese, tone features

9423

Sankaran, C R, et al. (1955) "A Study of Accent in Relation to the Alpha-phonoid Theory" Indian Linguistics. 16, pp. 196-203,

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ABSTRACT: An investigation of some relationships between pitch, stress and duration of vowels, and adjoining consonants.
KEYWORDS: pitch accent

9424

Sapir, Edward (1925) "Pitch Accent in Sarcee: an Athapaskan Language" Journal De La Societe Des Africanistes De Paris. NS 17 pp. 185-205
KEYWORDS: Sarsi, Athapaskan, pitch accent, North America

9425

Sarawit, Mary (1973) "The Proto-Tai Vowel System" Ph.d. Dissertation, University of Michigan, Ann Arbor
ABSTRACT: This dissertation also includes a neat summary of consonant-initial and, tone correspondences for numerous Tai dialects, including the Puyi dialects of southwestern China. A handy reference source for anyone interested in tonal development in the Tai language family.
KEYWORDS: tonal development, consonant types and tone, Southeast Asia, Tai, tone correspondences, China

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9426

Sawashima, M. Y. Kakita, and S. Hiki (1973) "Activity of the Extrinsic Laryngeal Muscles in Relation to Japanese Word Accent" Annual Bulletin of the Research Institute of Logopedics and Phoniatrics,
Tokyo. 7, pp. 19-25
ABSTRACT: EMG of one subject. Cricothyroid is clearly correlated with pitch rise. Vocalis and thyrohyoid less so. Vocalis fluctuations seem to represent syllabification. Sternohyoid correlates with pitch lowering.
KEYWORDS: larynx, physiology, pitch accent, pitch control, Japanese, Far East, muscles

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9427

Sawashima, M. et al. "Observing Laryngeal Adjustments During Running Speech by Use of Fibreoptic System" Phonetica. 22, pp. 193-201
ABSTRACT: A fiberoptic investigation of the glottis during running speech in American English. From data on a single speaker, it appears that certain classes of sounds may be distinguished by whether or not the arytenoid cartilages move apart. Some consonant classes, particularly, voiceless unaspirated stops, show some variability in this

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respect.
KEYWORDS: fiberoptics, Europe, larynx, consonant types and tone, English, Germanic

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9428
Schachter, Paul (1961) "Phonetic Similarity in Tonemic Analysis" Language. 37.2, pp. 231-238
NOTES: See John Stewart 1965 "The Typology of the Twi Tone System"
ABSTRACT: In discussing the problems of identifying the tones in Akan, which has a
possible contrast of two tones after low but of three after high, Schachter points to what he regards as an inadequacy in Pike's typology for tone languages. Positing a 'high -change' toneme restricted to distinctiveness after highand a fixed ch ange relation between high and high-change solves the problem of defining phonetic similarity between tones and rectifies the gap in the typology.
KEYWORDS: Akan, West Africa, techniques for tonal analysis, Kwa, tone typolcgy, downstep

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9429
Schachter, Paul (1969) "Natural Assimilation Rules in Akan" IJAL. 35.4, pp. 342-355
ABSTRACT: Schachter proPoses that postal's concept of naturalness in phonology be extended to include categorization of phonological rules as natural or not. In the case of assimilatory rules, it is suggested that the generalization that "unmarked feature valuesassimilate to adjacent marked feature values, rather than conversely" is a natural constraint on linguistic metatheory. Schachter's examples include a tone-assimilation rule that replaces low tone with high tone when a high one is adjacent. When this rule follows application of pitch-assignment rules that produce downdrift, the result is downstep. It is suggested that marking conventions should be extended to include prosodic features such as tone and length.
KEYWORDS: downdrift, Akan, downstep, Kwa, tone rules, Volta-Comoe, naturalness, West Africa, markedness conventions

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9430
Schachter, Paul and Victoria Fromkin (1968) A Pronology of Akan: Akuapem Asante and Fante. University of California, Los Angeles. 268 pp.
NOTES: UCLA Working Papers in Phonetics No. 9.
ABSTRACT: Principal tone rules include downdrift, tone incorporation and tone simplification - see pp. 105-116. Elsewhere

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nonphonological rules are discussed. High tone is regarded as[+ tone], downstep as resulting from the simplification of high-low.

KEYWORDS: Akan, morphotonology, Kwa, floating tones, West Africa, Volta-Comoe, downstep, downdrift, tone rules

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9431

Schneeberg, Nan (1971) "Sayanci Verb Tonology" Journal of African Languages. 10.1, pp. 87-100
KEYWORDS: downstep, Sayanci, tone rules, Chadic, morphotonology, West Africa

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9432

Schuh, Russell (1971) "Toward a Typology of Chadic Vowel and Tone Systems" University of California, Los Angeles.
ABSTRACT: Schuh examines the vowel systems of seven representative Chadic languages in the Biu-mandara and Plateau-Sahel groups. Suggests that Proto-Chadic had a three vowel system, /i,u,a/ together with a syllable-preserving schwa insertion rule. A long versus short distinction is also suggested for Proto-Chadic. Discusses the loss of i/u distinction medially in most Chadic languages. In the second half of the paper he hypothesizes that Proto-Chadic had a two tone system with downdrift, plus a system of tonal alternations. This claim is based on anaylsis of the tone systems of eight Chadic languages. He also discusses lexical restrictions on tone patterns, tone assignment or replacement, tone addition and displacement, and simplification and suppression. Although he does not reconstruct Proto-Chadic tone rules, his discussion of the above processes brings to light "certain features which typify Chadic tonology".
KEYWORDS: Chadic, Bolanci, West Africa, Dera, tone rules, Kanakuru, Ngizim, Angas, Ga'anda, contour tones, Margi, Karekare

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9433

Scott, N C (1947) "The Monosyllable in Szechuanese" Bulletin of the School of Oriental and African Studies, London. 12.1, pp. 197-213
KEYWORDS: Sinitic, Szechuanese, China, syllables

9434

Scripture, Edward (1973) The Elements of Experimental Phonetics. A.M.S. Press, Inc. New York. 627 pp.
NOTES: Originally published in 1902 Charles Scribner's Sons, New

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York.
ABSTRACT: The structure and actions of the larynx are discussed on pages239-280.
KEYWORDS: physiology, larynx

9435

Sedlacek, Kamil (1959) "The Tonal System of Tibetan (Lhasa Dialect)" T'oung Pao, Series 2. 47.3-5, pp. 181-250
KEYWORDS: tonal development, Bodic, tone sandhi, consonant types and tone, morphotonology, Tibetan, Indian Subcontinent, Tibeto-Burman

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9436

Shafer, Robert (1961) "Tones in Wintun" Anthropological linguistics. 3.6, pp. 17-30
ABSTRACT: A comparative word list is presented for two dialects of Wintun, Southe ast Wintun and Southwest Wintun. Certain tone pattern correspondences in Southeast Wintun and Southwest Wintun are briefly discussed.
KEYWORDS: North America, Wintun, tone correspondences, penutian

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9437

Sharman, J. C and A. E. Meeussen (1955) "The Representation of Structural Tones, with Special Reference to the Behavior of the Verb in Bemba (Northern Rhodesia)" Africa. 25, pp. 393-404
KEYWORDS: Bemba, Southern Africa, Narrow Bantu, Benue-Congo morphotonology, tone rules

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9438

Sharp, A. E. (1954) "A Tonal Analysis of the Disyllabic Noun in the Machame Dialect of Chaga " Bulletin of the School of Oriental and African Studies, London. 16.1, pp. 157-169
KEYWORDS: East Africa, chaGa, Narrow Bantu, Benue-Congo

9440

Shell, Olive (1950), "Cashibo I: Phonemes" IJAL. 16.4, pp. 198-202
ABSTRACT: Cashibo is said to have a phonemic high tone which only occurs in final position on a close front nasalized vowel.
KEYWORDS: vowel height and tone, Cashibo, South America, Pano

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9441

Shimizu, Kiyoshi (1970) "Morphotonology of the Kente Dialect of Kpan, the Same Language as the ' Extinct' Eregba" University of Ibadan, Nigeria.
NOTES: Paper presented at the 9th West African Languages, Freetown, Sierra Leone 19th - 24th March 1970.
ABSTRACT: The first part of this paper deals with the proper recognition of Kpan and its classification. The second part discusses the tones of noun prefixes and stems and what happens in noun + noun genitival structures. The only common prefixes have mid tone
before high stems and low tone before mid or low tone stems. In genitival structures, mid tones changes to low and low changes to mid in an assimilatory process, but nouns with a mid tone prefix undergo a number of less natural rules.
KEYWORDS: Kpan, morphotonology, Jukunoid, tone rules, Benue-Congo, West Africa

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9442

Shimizu, Kiyoshi (1970) "Contraction of Tones and Inherent Gliding Tones" Research Notes, University of Ibadan. 32.3, pp. 41-44
ABSTRACT: A set of rules to handle to tone contractions between a verb and following noun in the Wukari dialect of Jukun are proposed. Three level tones are posited for the underlying forms - high, mid, and low. The fact that the mid tone as the second member of sequence does not participate in tone contraction is given as an argument in favor of regarding the mid tone as 'unmarked'.
KEYWORDS: tone rules, markedness conventions, Jukun, Jukunoid, Benue-Congo

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9443

Shorto, H. L. (1966) "Mon Vowel Systems: a Problem in Phonological Statement" In Memory of J. R. Firth. C. E. Bazel, J. C. Catford, M. A. K. Holliday, and R. H. Robins (eds.) Longmans, London. pp. 398-409
KEYWORDS: Southeast Asia, Mon-Khmer, register, consonant types and tone, vowel height and tone

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9444

Siertsema, Berthe (1959) "Problems of Phonemic Interpretation II. Long Vowels in a Tone Language" lingua. 8.1, pp. 42-64
ABSTRACT: In this paper, Siertsema shows that all long vowels in Yoruba are to be interpreted as sequences of 2 short vowels

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belonging to two different syllables. Three level phonemic tones are posited - high, mid, and low. The basic syllable structure is cv. Contour tones are said to result from sandhi processes that apply across syllable boundaries.
KEYWORDS: vowel length and tone, tone distribution, contour tones, Kwa, domain of tone, syllables, West Africa, Yoruba reduplication

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9445

Siertsema, Berthe (1962) "Timbre, Pitch, and Intonation" Lingua. pp. 388-398
ABSTRACT: Investigates various functions of intonation in Dutch. Linguistic uses of pitch in various languages are discussed.
KEYWORDS: music and tone, intonation, emotion and pitch, Dutch, Germanic, Europe

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9446

Silverstein, Raymond (1973) Igala Historical Phonology. University of California, Los Angeles.
NOTES: ph. D. Dissertation. Available from University Microfilms, Ann Arbor, Michigan.
ABSTRACT: Includes discussion of correspondence between tones of Yoruba and Igala and explains some of the discrepancies as due to the influence of Idoma on Igala
KEYWORDS: Igala, tone correspondences, Yoruba, Idoma, Kwa, West Africa

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9447

Simmons, Donald (1960) "Tonal Rhyme in Efik Poetry" Anthropological Linguistics. 2.6, pp. 1-10
KEYWORDS: Efik-Ibibio, West Africa, literary style and tone, Cross River

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9448

Simmons, Donald, (1965) "Oron Noun Morphology" Journal of West African Languages. 2.2, pp. 33-37
NOTES: This article supplements the author's previous delineation of Oron verb morphology Africa 26 pp. 250-63, 1956.
ABSTRACT: This article deals with the morphotonemic alternations in noun morphology. The tone patterns of nouns change when the nouns occur with certain adjectives, with other nouns in a genitive constructions, as an object, and as an adverbial noun in interrogative sentences. There is much data to illustrate these points. The language has three level tones.

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KEYWORDS: morphotonology, syntactic structure and tone, Oron Cross River, Benue-Congo, West Africa

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9449

Simmonds, E.H.S. (1965) "Notes on Some Tai Dialects of Laos and Neighboring Regions" Lingua. 14, pp. 133-147
ABSTRACT: This paper offers some remarks on the distribution of tones and initial, consonants for 14 southwestern Tai dialects.
KEYWORDS: Southeast Asia, Tai, southwestern Tai, consonant types and tone, Siamese

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9450

Sinclair, Donald and Kenneth Pike (1948) "The Tonemes of Mesquital Otomi" IJAL. 14.2, pp. 1-98
NOTES: See Leon and Swadesh 1949.
ABSTRACT: A discussion of the distribution of tonemes in relation to vowels, adjacent consonants and consonant clusters, other tonemes, and different word types. Brief description of tone changes occurring in compounds, within certain words. And with a particular suffix; the effect of intonation on tone; and the borrowing of pitch-stress in Spanish loans. Article reviews the evidence for considering Otomi to be a tone language and concludes that vowel length and stress can be predicted from pitch but pitch cannot be predicted from them, therefore Otomi is a tone language.
KEYWORDS: Otomi, Central America, Otomanguean, tone distribution, stress and tone, techniques for tonal analysis, intonation and tone

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9451

Sivertson, Eva (1956) "Pitch Problems in Kiowa" IJAL. 22.2, pp. 117-130
ABSTRACT: Kiowa (spoken in oklahoma, USA) is described as having two level tones, high and low, and a falling tone which is regarded as a sequence of high and low. Sivertson shows that a sucession of like tones (high or low) steadily lowers in pitch and a sequence of unlike tones shows a downdrift pattern. High tones lower more than low tones do. Laryngealization and stress can be predicted from tone and/or vowel length or quality. Some of the morphological functions and morphophonemic perturbations of tone are also discussed.
KEYWORDS: stress and tone, Kiowa, instrumental study of tone morphotonology, downdrift, North America, tone rules, Kiowa-Ta noan, grammatical tone

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9452
Smith, Nielson (1967) "The Phonology of Nupe" Journal of African Languages. 6, pp. 153-169
KEYWORDS: Nupe, West Africa, tone rules, Kwa

9453
Smith, Nielson (1968) "Tone in Ewe" Quarterly Progress Report, Research Laboratory of Electronics, Massachusetts Institute of Technology. 88, pp. 290-304
KEYWORDS: syntactic structure and tone, Ewe, Kwa, West Africa, tone rules

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9454
Spears, Richard (1966) "A Note on the Tone of Maninka Substantives" Journal of African Languages. 5.2, pp. 113-120
ABSTRACT: Spears suggests that tone in Faranah dialect of Maninka is limited to the same sequences in nominal phrases of various kinds as appear on monosyllables. Alternations of basic tones are conditioned by placement in such nominal constructs.
KEYWORDS: Mandekan, Mande, tone rules, domain of tone, West Africa

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9455
Spears, Richard (1967) "Tone in Mende" Journal of African Languages. 6, pp. 231-244
ABSTRACT: Criticizes and extends previous decriptions of Mende tone. Shows that a set of rules including tonal extension, low tone assignment, and normal, tone interpretation correctly predict tone throughout the morphology and syntax of Mende. Interesting data on polarizing personal pronouns. Shows that the same phonetic sequence of tones - 132 - can be derived from as many as six underlying patterns. Claims that all cases of tone change in Mende but one consist of low tone assignment.
KEYWORDS: tone rules, downdrift, polar tone, menoe, Mande, West Africa

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9456
(1954) "Verbal Phrases in Lhasa Tibetan - I" Bulletin of the School of Oriental and African Studies, London. 16.1, pp. 134-156
KEYWORDS: Tibeto-Burman, Tibetan, consonant types and tone, Bodic, Indian Subcontinent

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9457

Sprigg, R. K. (1955), "The Tonal System of Tibetan (Lhasa Dialect) and the Nominal Phrase" Bulletin of the School of Oriental and African Studies, London. 17, pp. 134-153
NOTES: Reprinted in Prosodic Analysis, edited by F. R. Palmer, pp. 112-132. Oxford University press. 1970.
ABSTRACT: Attempts to show that tonal phenomena are best described in reference to the word, not the syllable.
KEYWORDS: Tibeto-Burman, Indian Subcontinent, Bodic, syllables, domain of tone, consonant types and tone, intonation and tone, syntactic structure and tone

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9458

Sprigg, R. K. (1962) "Junction in Spoken Burmese" Studies in Linguistic Analysis. Basil Blackwell, Oxford. pp. 104-138
NOTES: Special volume of the Philological Society.
ABSTRACT: A prosodic analysis of Burmese.
KEYWORDS: Tibeto-Burman, Southeast Asia, Burmese, consonant types and tone, syllables, vowel height and tone, tone distribution, domain of tone, segmental tone, suprasegmental tone, vowel length and tone, phonation type and tone, Lolo-Burmese

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9459

Sprigge, R. G. S. (1972) "An Enquiry into the Tonemic Approach to Tone" University of Ghana, Legon.
NOTES: Paper presented at the 10th West African Languages Congress, Legon, Ghana, March 1972.
ABSTRACT: This paper reviews Ansre's and Smith's analyses of tone in 'standard' Ewe and compares the tone system of Adangbe Ewe in terms of underlying tones ('tonemes') and their realizations. Sprigge concludes that Adangbe Ewe (and probably standard Ewe too) requires the recognition of only two tonemes, high and normal (non-high) in order to capture generalisations about the tone of stems. Depending on the consonant type and position in the phonological phrase etc, syllables have two realizations of each toneme, low and mid for normal high and rising for high. Further, in non -final positions the rising allotone of high has mid and low realizations before mid and high pitch respectively. Problems in setting up the intermediate level of realization and having overlapping membership among tonemes are discussed.
KEYWORDS: tone rules, techniques for tonal analysis, tone sandhi, consonant types and tone, Ewe, Kwa, West Africa

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9460

Sprigge, R. g. S. and Kevin Ford (1972) "General Tone Rules for Nouns and Verbs in Ewe" University of Ghana, Legon.
NOTES: Paper presented at the 10th West African Languages Congress, Legon, Ghana, 21-27 March 1972
ABSTRACT: Three consonant classes, a) voiced obstruents b) voiceless obstruents and c) sonorants, are shown to be important in the tonology of the Adangbe
dialect of Ewe (spoken in Togo). The vocalic prefix of nouns is absent when a marker of possession precedes; in this case underlying low tone monosyllabic noun stems are realised with mid p itch. When the prefix is present low tone stems are realised with low pitch after class A consonants and high tone stems are realised
with mid-high pitch rise after class A or class C consonants. Using [tight] and [slack] as tone features, rules are written to predict
the pitch levels of the noun prefixes, noun stems, and verb stems in some positions. Non-syllabic vowels are used in the representation of gliding pitches.
KEYWORDS: consonant types and tone, tone rules, tone features, morphotonology, Ewe, Kwa, West Africa

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9461

Stahlke, Herbert (1971) "The Noun Prefix in Ewe" Studies in African Linguistics. Supplement 2, pp. 141-159
NOTES: This paper is a revised and expanded version of the paper originally re ad at the 2nd Annual Conference on African Linguistics, March 26-27, 1971.
ABSTRACT: The purpose of this paper was to show that the generally accepted analysss of Ewe tone as being predictable from the classof the preceding cons onant is not correct. But, there is, instead, both syntactic and phonological evidence showing that certain pervasive tonal alternations in Ewe are predictable from the tone of the noun prefix.
KEYWORDS: application of phonological rules, consonant types and tone, evaluation measures, floating tones, markedness conventions, morphotonology, redundancy rules, reduplication, segmental tone, syntactic structure and tone, tone rules, Ewe Kwa, West Africa

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9462

Stahlke, Herbert (1971) "Topics in Ewe Phonology" University of California, Los Angeles.
NOTES: Prof. dissertation
ABSTRACT: Chapter 4 discusses previous studies of tone in Ewe, outlining the basic
contributions of Westermann, the analysis of Ansre, and Smith's

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analysis of the mid/low alternation. Smith and Ansre claim that t he mid/low alternation is closely tied to the consonant system. In chapter 5, the author shows that the mid/low alternation is neither so closely tied to the consonat system as Ansre claims nor so complex and
syntactically conditioned as Smith claims. He proposes a new hypothesis claiming that all nouns, including those that are consonant-initial, have prefixes, thus it is the existence of an underlying noun prefix that accounts for a gre at number of the mid/low alternations. In chapter 6, the author discusses the complex behavior of high tones and rising tones. He discusses Ansre's 'high tone suffix', and he shows that in many instances in nouns and in all instances in verbs the rising tone is derived from an underlying short high tone by a rule of low tone insertion.
KEYWORDS: application of phonological rules, consonant types and tone, evaluation measures, floating tones, morphotonology, reduplication, segmental tone, tone rules, Ewe, Kwa, West Africa

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9463

Stappers, Leo (1952) "Het Toonsystem Van Het Buina Milembwe (Zuid-kiSongye)" Kongo-Overzee. 18, pp. 199-244
KEYWORDS: morphotonology, songye, Narrow Bantu, Benue-Congo Central Africa

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9464

Stappers, Leo (1962) "Toonstruktur Van Het WerkWoord in Het Musolo" Africana Linguistica. (Terrunen). 1, pp. 99-121
KEYWORDS: Ilande, Central Africa, Benue-Congo, Narrow Bantu, morphotonology, Solo

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9465

Steinkraus, Walter (1969) "Tifal Phonology Shoving Vowel and Tone Neutralisation" Kivung (Journal of the Linguistic Society of the University of Papua and
New Guinea). 2.1, pp. 57-68
ABSTRACT: In an outline phonology of Tifal attention is concentrated on alternations of vowels and tones. Two level tones contrast on long and short vowels but in words of two or more syllables with a short first vowel the underlying tone is replac ed by the tone of the following syllable.
KEYWORDS: Tifal, New Guinea, tone rules

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9466

Stevick, Earl (1965) "Pitch and Duration in Two Yoruba Idiolects" Journal of African Languages. 4.2, pp. 85-101
ABSTRACT: This analysis aims to account for the complexities of pitch and duration
in two Yoruba idiolects. The author begins by discussing the problems of the pitch phenomena. In doing so, he discusses the inconsistencies among the statements of other
authors. He claims that the difficulties arise from the fact that in yoruba the analysis of pitch is inextricably bound up with the analysis of syllable duration, yet, duration has not received the careful scrutiny to which pitch phenomena have been subjected. Using
material from recordings of two subjects, he illustrates the pitch contrasts on single vowels, and the pitch contrasts on the second mora of a double vowel. He discusses a 5-3 mora analysis (on long vowels, five pitch possibilities for the first mora, three pitch possibilities for the second mora) to
account for the data, but prefers a 4-3-3 mora analysis which accounts for all the phenomena of pitch and duration which appe ared in his materials.
KEYWORDS: domain of tone, mora, level tones, morphotonology Yoruba

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9467

Stevick, Earl (1969) "Tone in Bantu" IJAL. 35.4, pp. 330-341
ABSTRACT: Stevick makes the claim that modern Bantu tones are derived from a presence-absence contrast rather than from a contrast, of two coordinate entities. In other words, Proto-Bantu was a one-tone language. The author regards high tone as the presence and low tone as the absence of some positive entity. This claim is supported by distributional and/or phonetic evidence from Ganda, Shambala, Tonga, Rundi, Xhosa and other languages. He discusses pitch and duration rules of tone spreading, tone dissimilation, etc. the phonetic realization of high and low tones, the effect of 'depressor' consonants on tone, and 'tone reversal' in some languages.
KEYWORDS: consonant types and tone, tonal development, tone listribution, tone rules, Ganda, Shambala, Narrow Bantu, Southern Africa, Central Africa, Tonga, Rundi, Xhosa, Bemba, Zulu, Nyanja, Swazi, Benue-Congo, East Africa

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9468

Stewart, John (1965) "The Typology of the Twi Tone System" Institute of African Studies, University of Ghana, Legon.
NOTES: Preprint from the Bulletin of the Institute of African Studies. This journal never appe ared but this article was circulated together with commen ts by William Welmers and Paul

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Schachter.
ABSTRACT: This article takes issue with points in Welmer's 1959 and Schachter's 1961 articles dealing with the issues of downstep and downdrift in various
West African languages, particularly Akan. With these articles and replies by the respective authors, it forms a major part of the debate on the nature of these phenomena and their typological significance. Stewart suggests an essential identity between downdrift and downstep suggesting the second is the consquence of the first. He proposes, them, that Hausa and Akan have typologically similar tone systems.
KEYWORDS: Akan, Kwa, Volta-Comoe, West Africa, tone typology, downdrift, downstep

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9469

Stewart, John (1971) "Niger-Congo: Kwa" Current Trends in Linguistics Vol. 7: Linguistics in Sub-saharan Africa. Sebeok, Thomas (ed.) Mouton, the Hague. pp. 179-212
ABSTRACT: This review article points to are as in which recent important progress has been made in the study of 'Kwa' languages. One of the sections is on tone. Attention principally centers on the question of terracing (downdrift and downstep). Stewart distinguishes 'key-lowering' from terracing and suggests that the 3-level tone, system in Yoruba developed, through elaboration of the tone lowering rules, into the Ewe, then Akan type of system.
KEYWORDS: Kwa, Akan, Ewe, Yoruba, West Africa, downdrift, downstep, tone rules, tonal development, tone typology

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9470

Stimson, Hugh (1969) "Peiping Tonal Pho notactics" Bulletin of the Institute of History and Philology, Academia Sinica. 39, pp. 197-201
ABSTRACT: A stratificational analysis of tone sandhi in Peiping Chinese.
KEYWORDS: Sinitic, Pekinese, China, tone sandhi, statificational

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9471,

Stoll, A. (1955) La Tonetique Des Langues Bantu et Semi-Bantu Du Cameroun. I.F.A.N. Yaounde. 171 pp.
NOTES: Memorandum 4, Centre I.F.A.N. Cameroun
ABSTRACT: A very combative and opinionated book which proposes general constraints
on tonal systems (Part 1 general tonology) and an interpretation of the tone systems of Fe? Fe? (Bamileke), Yaunde and Duala.
KEYWORDS: tonal iconism, tone typology, tone rules, Fe? Fe?

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West Africa, Bamileke, Narrow Bantu, Bantoid, Benue-Congo, Yaunde, Duala

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9472

Sundberg, J. (1973) "Data on Maximum Speed of Pitch changes" Speech Transmission Laboratory Quarterly Progress and Status Report, Royal Institute of Technology, Stockholm. 4.1973, pp. 39-47

ABSTRACT: Maximum speed of pitch change was measured in male and female singers and untrained subjects. On the average, singers change the pitch more quickly than untrained subjects, and female subjects than male subjects. Unlike singers, untrained subjects perform pitch drops considerably faster than pitch rises. Implications of the results are discussed, including the lack of any support for the view that larynx height alterations increase the speed of pitch changes.

KEYWORDS: pitch control, speed of pitch change

9473

Surintramont, Aporn (1973) "Some Aspects of Underlying Syllable Structure in Thai: Evidence from Khamphuan - a Thai Word Game" Studies in the Linguistic Sciences. 3.1, pp. 121-142

ABSTRACT: In this paper, SurintrAmont uses evidence from khampuan, a Thai word game which involves the reversal of the 'final sounds' of two syllables, to support his analysis of underlying syllable structure in Thai and tone neutralization in syllables containing a short vowel. It is argued that the glottal stop occurs in syllable-final as well as syllable-initial position in underlying phonological representations and that it is the deletion of the glottal stop in certain environments that causes the neutralization of underlying low or high tone on short syllables to mid tone. In connection with this rule of tone neutralization, a global derivational constraint is proposed to block its application to certain forms that otherwise meet its structural description.

KEYWORDS: Southeast Asia, Tai, Siamese, tone rules, language games, application of phonological rules

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9474

Sutton, D. C. R. Larson, and D. M. Farrell (1972) "Cricothyroid Motor Units" Acta Otolaryngologica. 74. 1-2, pp. 145-151

ABSTRACT: Reports on an electromyographic study of the cricothyroid muscle. Subjects were provided with visual feedback on motor unit activity. Single motor units thus were isolated for study as subjects learned to control them. This study concluded

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that phonation in intermediate pitch ranges places only a minimal demand on the muscle but modulations of pitch above and below this intermediate point result in markedly greater activity. Posture was
also shown to affect cricothyroid muscle activity.
KEYWORDS: pitch control, larynx, muscles, electromyography, physiology

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9475

Tadadjeu, Maurice (1974) "Floating Tones, Shifting Rules and Downstep in DsChang-Bamileke" Studies in African Linguistics. Supplement 5
NOTES: Paper presented at the 5th Annual African Linguistics Conference, Stanford, 1974.
KEYWORDS: Dschang, Bamileke, West Africa, Bantoid, Benue-Congo, floating tones, downstep, level tones, tone rules

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9476

Taylor, H. C. (1933) "The Fundamental Pitch of English Vowels" Journal of Experimental Psychology. 16.4, pp. 565-582
ABSTRACT: Finds vowel-pitch triangle exactly parallels traditional 'vowe l-triangle' based on anatomical considerations. Hypothesizes that vowel-pitch triangle results from dynamogenetic irradiation of the tongue tension to
the vocal cord musculature. Support for dynamogenetic explanation also, provided by findings that tension in the hand musculature is concomitant with a rise in the pitch of the voice.
KEYWORDS: vowel height and tone, intrinsic pitch of vowels, dynamogenesis, acoustics

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9477

Taylor, L. F. (1920) "On the Tones of Certain Languages of Burma" Bulletin of the School of Oriental Studies, London. 1.4, pp. 1-106
ABSTRACT: Phonetic descriptions of the tones for a number of languages and dialects spoken in Burma - Shan, Burmese, Sgaw Karen, Pwo Karen, delta Pwo kare n, tennaserim Pwo Karen - are presented. Included also is a brief description of the tones of Siamese.
KEYWORDS: domain of tone, consonant types and tone, vowel length and tone, Tibeto-Burman, Tai, Siamese, Shan, sgaw Karen, Pwo Karen, Burmese, Southeast Asia, Karen

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9478
Thomas, Elaine (1967) "A Problem in Tonal Analysis" Institute of Linguistics, Nigeria.
ABSTRACT: Thomas considers the tone system of Egene (Engenni) and concludes that an 'unstep' has to be posited to account for the different tone levels and their distribution.
KEYWORDS: Edo, Egene, downstep, upstep, techniques for tonal analysis, West Africa, Kwa

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9479
Thomas, Northcote (1915) "Tone in Ibo" Man. 15, pp. 36-38
KEYWORDS: Igbo, Lower Niger, West Africa, Kwa

9480
(1972) "A Comment on 'A Miao Secret Language' " Miao and Yao Linguistic Studies. Herbert C. Purnell, Jr. (ed.) Southeast Asia Program, Cornell University, Ithaca, New York. pp. 237-238
NOTES: Contains selected articles in Chinese translated into English by Chang Yu-Hung and Chu Kwo-Ray. Data Paper No. 88. Linguistic Series VII.
KEYWORDS: language games, Miao, Miao-Yao, China

9481
Trager, Felicia (1971) "The Phonology of Picuris" IJAL. 37.1, pp. 29-33
ABSTRACT: Description and exemplification of the phonemic system of Picuris, including an inventory of segments, with their allophones and positions of occurrence and some justification for aspects of the analysis; and an inventory of suprasegmental phonemes, including stresses, tones, and transition phonemes. Brief discussion of the effects of stress on tone, the effects of both on vowel length, the distriburtion of tones, and the effects of transition phonemes on assimilation and tone.
KEYWORDS: North America, Picuris, Ta noan, vowel length and tone, stress and tone

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9482
Trutenau, Helmut (1972) "A Sketch of Tone Rules Required for a Generative Transformational Grammar of Ga (a Terraced Level Tone Language)" Linguistics. 79, pp. 83-96
KEYWORDS: tone rules, segmental tone, suprasegmental tone, West Africa, tone features, Ga, Kwa

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9483

Tsu-lin, Mei (1970) "Tones and Prosody in Middle Chinese and the Origin of the Rising Tone" Harvard Journal of Asiatic Studies. 30 pp. 86-110
ABSTRACT: Attempts to show that the rising tone of Middle Chinese developed through the loss of a final glottal stop. Discusses phonetic features of the four tones in Middle Chinese and the criterion for the level-oblique distinction.
KEYWORDS: tonal development, consonant types and tone, China Sinitic

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9484

Tsung-wu, Mao and Chou Tsu - Yao (1972) "A Brief Description of the Yao Language" Miao and Yao Linguistic Studies. Herbert C. Purnell, Jr. (ed.) Southeast Asia Program, Cornell University, Ithaca, New York. pp. 239-255
NOTES: Contains selected articles in Chinese translated into English by Chang Yu-Hung and Chu Kwo-Ray. Data Paper No. 88, Linguistic Series VII.
KEYWORDS: Yao, Miao-Yao, China, tonal development, tone sandhi

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9485

Tucker, A. N. (1949) "Sotho-Nguni Orthography and Tone-marking" Bulletin of the School of Oriental and African Studies, London. 53.1, pp. 200-224
ABSTRACT: Tucker suggests proposals for a more uniform orthography of Nguni (Zulu and Xhosa) and Sotho. Analyses of tone are included. Sotho is described with three tonemes, high, falling, and mid (non-high) and so is Nguni but Nguni has a heightening effect of
non-breathy consonants. Nguni is said to have downdrift while Sotho exhibits 'steps up' of a similar kind.
KEYWORDS: Nguni, Sotho, Southern Africa, Narrow Bantu, Benue-Congo, orthography, downdrift, upstep, consonant types and tone

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9486

Tucker, A. N. and Margaret Bryan (1970) "Tonal Classification of Nouns in Ngazija" African Language Studies. 11, pp. 351-382
NOTES: In volume in honour of Malcolm Guthie.
ABSTRACT: In this article Tucker and Bryan describe and illustrate the tone patterns of nouns and noun phrases in Ngazija, a language closely related to Swahili. This is of interest since Swahili has lost all tone and data from this

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language would be useful in reconstructing tone for Swahili. The noun tone classes of Ngazija
are listed with numerous examples. Included are examples of the tonal behavior of samples of each
tonal noun class in noun phrases.
KEYWORDS: East Africa, Ngazija, Swahili, morphotonology, Narrow Bantu, Benue-Congo

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9487

Tung, Chao-hui (1968) "The Phonological System of Gaoxiong, a Min Dialect of Chinese" Project on Linguistic Analysis; Phonology Laboratory, University of California, Berkeley. 5, pp. 1-77
ABSTRACT: Gaoxing (a South Min Chinese dialect spoken in southwest Taiwan) has 5 contrastive tones on unchecked syllables (those not ending in a noncontinuant segment), 2 contrastive tones on checked syllables. In unchecked syllables, 3 distin ctive tone features are posited: high, falling, and rising; in checked s yllables, only 1 distinctive tone feature is posited: high. A principle tone sandhi rule common to all the
South Min Chinese dialects is discussed in detail. Roughly speaking, every morpheme of Gaoxiong shows two alternant tones; one that occurs in phrase-final position, the other elsewhere, regardless of the tone or other phonological characteristics of neighboring syllables. The formal description of the rule includes paired variables;
the rule itself applies cyclically. Spectrograms of utterances that show the tonal alternants are included in an appendix. See especially t5-t12, t30-t31, t37-t37b, t40, and t57-t65.
KEYWORDS: China, Gaoxiong, tone features, tone rules, paired variables, cyclic rules, tone sandhi, instrumental study of tone, Sinitic

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9488

Uldall, Elizabeth (1973) "Commentary on Vocal Cords Film "Vocal Cord Action in Speech"" Work in Progress - Department of Linguistics, Edinburgh University. 6, pp. 56-57,
NOTES: Commentary on high-speed film made in 1957 at the Federal Institute of Technology, Zurich and presented at the 8th International Congress of Linguistics, Oslo, 1957.
KEYWORDS: larynx, pitch control

9489

Ultan, Russell (19Xx) "A Case of Sound Symbolism in Konkow" Studies in American Indian Languages. Sawyer, Jesse (ed.) University of California Press, Berkeley. pp. 295-301
ABSTRAC": Distinctions along a diminutive-augmentative dimension

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are symbolised in
sound by vowel ablaut and tone changes.
KEYWORDS: tonal iconism, konkow, Maidan, Penutian, North America

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9490

Upson, Jessamine (1968) "Chatino Length and Tone" Anthropological Linguistics. 10.2, pp. 1-7
ABSTRACT: Chatino is reported to have 4 level tones. Many examples are given to illustrate the close relationship between vowel length and tone.
KEYWORDS: Central America, Chatino, vowel length and tone, tone sandhi, intonation and tone, tone distribution, Mixtecan, Otomanguean, level tones

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9491

Van Avermaet, E. (1945) "Les Tons En KiLuba Samba et Le Tambour-Telephone" Aequatoria. 8.1, pp. 1-12
ABSTRACT: Maintains there are three level tones and five compound tones (HL, LH, HH, ML, LM) in the samba dialect of Luba and that the tone rules are more
complex than Burssens recognises. Nevertheless surrogate languages (whistle, drum, horn) employ only two tones high and low in sending messages. The standard drum-language messages do not have the same tones as spoken language usually has, although certain stylised rhetorical or chanted forms are more similar to the simplified tone and rhythm of the drum-language. Van Avermaet speculates that the drum-language may be more conservative.
KEYWORDS: drum language, music and tone, whistle speech, Luba, Narrow Bantu, Benue-Congo, Central Africa

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9492

Van Caeneghem, R. (1950) "Aanvullingen Bij Een Fonologische Studie" Aequatoria. 13.3, pp. 81-92
ABSTRACT: Discusses the tone rules and meanings of various suffixes in Ciluba. In many cases suffixes take tone polar to the preceding tone. There is variation between various Luba dialects in the rules. Some of this variation is discussed.
KEYWORDS: tone rules, polar tone, Narrow Bantu, central Africa, Benue-Congo, Luba

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9493

Van Lancker, Diana and Victoria Fromkin (1973) "Hemispheric Specialization for Pitch and "Tone": Evidence from Thai" Journal

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of Phonetics. 1, pp. 101-109
ABSTRACT: In past dichotic listening studies, linguistic stimuli have shown a right ear advantage, implying left hemisphere dominance for language processing, while other stimuli incorporating pitch distinctions have shown no ear preference or a left ear (right hemisphere) advantage. An experiment was devised to compare ear preferences in tone language speakers for three sets of stimuli: pitch differences within language stimuli (tone words in the tone language, Thai); language stimuli without pitch differences (consonant-vowel words on mid tone); and pitch differences alone (hums). Results from 22 native Thai speakers demonstrate that tone-words and consonant-words are better heard at the right ear, while the hums show no ear preference. Preliminary results or English-speaking subjects suggests that the consonant-words give the usual right ear effect, while the tone words and the
hums do not. This study leads to the conclusion that pitch discrimination is lateralized to the left hemisphere when the pitch differences are linguistically processed.
KEYWORDS: tone perception, Siamese, dichotic listening, Southeast Asia, Tai

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9494,
Van Riper, Charles and John Irwin (1958) Voice and Articulation. Prentice-Hall, Englewood Cliffs, New Jersey. 566 pp.
ABSTRACT: Structure of the larynx and mechanics of phonation covered in chapter 13, pp. 418-456.
KEYWORDS: larynx, physiology, pitch control

9495
Van Spaandonck, Marcel (1967) Morphotonologische Analyse in Bantutalen. Brill, Leiden. 204 pp.
ABSTRACT: A study of morphotonology in a number of Bantu languages with emphasis on processes such as tone repetition, tone displacement. A summary in English appears on pp. 191-204.
KEYWORDS: Tetela, Shambala, Tonga, Shona, Holoholo, Bangubangu, Songye, Narrow Bantu, Southern Africa, central Africa, Benue-Congo, morphotonology, tone rules

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9496
Van Spaandonck, Marcel (1971) "On the So-called Reversing Tonal System of CiLuba: a Case for Restructuring" Studies in African Linguistics. 2.2, pp. 131-144
ABSTRACT: This paper cHallenges the idea that the tones of Ciluba are reversed from Proto-Bantu tones. Comparison with Mongo shows that not all tones are reversed in Ciluba. Van Spaandonck suggests

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instead that progressive assimilation and displacement rules, particularly shifting the high tone of the copula ni to the right, account for the apparent reversals.
KEYWORDS: Narrow Bantu, Mongo, Luba, rule ordering, polar tone, tone rules, tonal development, Benue-Congo, Central Africa

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9497
Van Thiel, H. (1947) "Tonetick Van Het Lingombe" Aequatoria. 10 pp. 70-77
KEYWORDS: morphotonology, tone rules, Ngombe, Narrow Bantu, West Africa, Benue-Congo

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9498
Vanvik, Arne (1963) "Some Problems in Scandanavian Tonemics" Phonetica. 10.3-4, pp. 165-173
KEYWORDS: Norwegian, Germanic, Europe, pitch accent

9499
Vihman, Eero (197X) "Accent in Northern Pomo" Hokan Studies. Langdon, Margaret and Shirley Silver (eds.) Mouton, the Hague.
NOTES: Forthcoming
KEYWORDS: pitch accent, Hokan, Pomo, Northern Pomo, North America

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9500
Von Essen, Otto (1962) "Sprachliche Ermittlungen Im Nama - Hottentotischen Nach Einer Tonbandau Frahme" Zeitschrift Fur Phonetik. 15.1-2, pp. 65-92
ABSTRACT: A transcription of a recording of Nama followed by translation and remarks on the pronunciation of sounds and the accentual and tonal systems.
KEYWORDS: Nama, Southern Africa, Khoisan

9501
Von Essen, Otto (1971) "Bedeutungsbestimmende Silbentonhohen in Der Sprache Der Herero" Afrikansiche Sprachen Und Kulturen - Ein Querschnitt. Six, Veronika, et al. (eds.) Deutsches Institut Fur Afrika-Forschung, Hamburg. pp. 88-94
KEYWORDS: Herero, Southern Africa, Narrow Bantu, Benue-Congo

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9502
Voorhis, Paul (1971) "Notes on Kickapoo Whistle Speech" IJAL. 37.4, pp. 239-243
ABSTRACT: Brief description of Kickapoo whistle speech, how it is produced and when it is used. Only pitch and length of vowels and vowel clusters are represented. Based on a limited corpus, Voorhis presents a set of rules for deriving whistle sentences from their spoken
equivalents, including rules for the realizations of consonants (transi tions), vowel length and pitch, and emphasis. Exceptions are noted. Brief description of the origin and role of pitches in spoken Kickapoo (insofar as they have yielded contrasts in whistle speech), including a description of the (intonation al) accent system of the language, its inheritance of long and short vow els from Proto-Algonquian, the emergence of vowel clusters, and how these factors resulted in placing pitch differences in a contrastive role. Kickapoo is not a tone language, but it is suggested that these historical developments have been reconstructed for many tone languages.
KEYWORDS: North America, whistle speech, Kickapoo, tonal development, pitch accent, Algonquian

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9503
Voorhoeve, Jan (1959) "An Orthography for Saramaccan" Word. 15.3 pp. 435-445
ABSTRACT: Gives evidence for analysis of tone contours as sequences of high and low level tones and recommends an orthography in which long vowels are written double with only high tone marked. A text in this orthography is printed.
KEYWORDS: South America, Atlantic Creole, Saramaccan, vowel length and tone, orthography, contour tones

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9504
Voorhoeve, Jan (1961) "Le Ton et La Grammaire Dans Le Saramaccan" Word. 17.2, pp. 146-163
ABSTRACT: Voorhoeve discusses basic and perturbed tone patterns for words in Saramaccan (spoken in Surinam). Forms in isolation are perturbed and
there are tone sandhi effects as well as syntactically conditioned tone. These are exemplified and rules for pert urbation drawn up. Since basic forms cannot be predicted from perturbed forms Voorhoeve recommends a Saramaccan orthography should write basic tones.
KEYWORDS: South America, Atlantic Creole, Saramaccan, syntactic structure and tone, orthography, tone rules, tone sandhi

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9505

Voorhoeve, Jan, (1964) "Some Problems in Writing Tone" Orthography Studies. Smalley, William United Bible Societies, London. pp. 127-131
NOTES: Reprinted from Bible Translator 13.1 pp. 34-38. 1962.
KEYWORDS: orthography, Saramaccan, South America, Atlantic Creole

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9506

Voorhoeve, Jan (1965) "The Structure of the Morpheme in Bamileke (Bangangte Dialect)" Lingua. 13, pp. 319-334
KEYWORDS: Bamileke, Bantoid, Benue-Congo, West Africa

9507,

Voorhoeve, Jan (1968) "Towards a Typology of Tone Systems" Linguistics. 46, pp. 99-114
NOTES: The author warns readers that the rules in this paper contain serious errors. Translation of "Toontypen: het Thema achter de Variaties" Mouton, the Hague, 1967. pp. 25. Inaugural lecture, Leiden University.
KEYWORDS: tone typology, West Africa, tone rules, central Africa, East Africa, downdrift, downstep, stress and tone, Bamileke, Hausa, Igbo, Chadic, Bantoid, Kwa, Benue-Congo

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9508

Voorhoeve, Jan (1971) "Tonology of the Bamileke Noun" Journal of African Languages. 10.2, pp. 44-53
ABSTRACT: Voorhoeve claims that in Bamileke nominals it is the change of levels not the levels themselves that are basic to the system. change is defined in relation to the preceding tone. Tone rules are discussed, including a process of total downstep by which
high tones are lowered to be equal with low tone after a sequence high-low.
KEYWORDS: downstep, morphotonology, floating tones, Bamileke Bantoid

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9509

Voorhoeve, Jan, A. E. Meeussen, and Kees De Blois (1969) "New Proposals for the Description of Tone Sequences in the Igbo Completive Phrase" Journal of West African Languages. 6.2, pp. 79-84

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ABSTRACT: This analysis was done within the framework of a generative grammar. The
authors used floating tones and the application of a number of tone rules to account for the complex morphotonemic alternations within the Igbo completive phrase
(associative construction). The concept of floating tones was also employed to account for the phenomenon of downstep and downdrift. The floating tones were represented by the features [-segment], [+high] or [high].
KEYWORDS: downdrift, downstep, floating tones, morphotonology, segmental tone, syntactic structure and tone, Igbo, tone features, tone rules, Kwa, Lower Niger, West Africa

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9510

Voorhoeve, Jan (1973) "Safwa as a Restricted Tone System" Studies in African Linguistics. 4.1, pp. 1-22
NOTES: Presented at the Conference on Prosodic Systems, Leiden University, September 9-11, 1972.
ABSTRACT: According to Voorhoeve, tone and stress are not independent prosodic features; rather they reflect underlying distinctons in prominence. Tone is
lexically-defined prominence; stress is rule-defined pominence. The term 'tone language' refers to a language with lexically-defined prominence, while the term 'stress language' refers to a language with rule-defined prominence. Safwa, a Bantu language spoken in Tanzania, is a borderline case. Prominence is lexically-defined in nonverbal constructions, but rule-defined in verbal constructions. It is found that the word is an essential unit in the Safwa prosodic system. Only 1 vocalic segment can be prominent between 2 successive word boundaries. Also included in the paper is an outline of the historical development of the Safwa prosodic system (Proto-Bantu to Safwa) and examples of prominence from other languages-, Nyakyusa (penultimate stress), Sranan (prenultimate stress, with final stress for a few lexical items), English, and Gambian Mandinka (level or moving accent throughout the word). The theoretical problem of fully-specified underlying segments versus partially-specified underlying segments is discussed in connection with the neutralization of high tones in morphemes in non-word-final position. Voorhoeve argues for partially-specified underlying segments.
KEYWORDS: stress, tone typology, Narrow Bantu, Safwa, tonal development, East Africa, nature of phonological representations

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9511

Wang, William (1967) "Bibliography of Chinese Linguistics" Current Trends in Linguistics Volume 2: Linguistics in East Asia and South East Asia. Thomas A. Sebeok Mouton, the Hague. pp. 188-499

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ABSTRACT: First large-scale bibliography on Chinese Linguistics. Contains numerous articles on tone.
KEYWORDS: China, Tai, Miao-Yao, Sinitic,

9512

Wang, William (1967) "Phonological Features of Tone" IJAL. 33, pp. 3-105
ABSTRACT: In this paper Wang proposes a set of 7 phonological features plus redundancy and marking conventions for tone. His set of phonological features includes both level and contour tone features. With his system 5 level tones can be contrasted. He argues for binary over n-ary tone features, and suprasegmental over segmental representation of tone. Examples of tone phenomena in Chinese dialects: 1. Gaoxiong - a pitch lowering phenomenon in which the high tone becomes mid tone, the mid tone becomes low tone, and the low tone becomes falling tone in a given syntactic environment. p. 101; 2. Chaozhou - a sandhi phenomenon where the hi gh tone bec omes low tone and the low tone becomes high tone before a high falling tone, the mid tone remains unchanged. p. 102; 3. Amoy Hokkien - a sandhi phenomenon in a large class of syntactic environments where the five long tones undergo a 'chain shift' p. 104-5.
KEYWORDS: China, Amoy, Gaoxiong, Chaozhou, tone features, tone rules, redundancy rules, markedness conventions, suprasegmental tone, Sinitic, polar tone

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9513

Wang, William (1972) "The Many Uses of Fo" Papers in Linguistics and Phonetics to the Memory of Pierre Delattre. Albert Valdman (ed.) Mouton, the Hague. pp. 487-503
NOTES: An earlier version of this paper appears in Project on Linguistic Analysis 2nd Series 8:w1-w35. 1968. Phonology Laboratory, University of California, Berkeley.
ABSTRACT: Linguistic formatives associated with Fo (fundamental frequency of the glottal tone) are posited at 3 levels: syntactic accent (intonation), morphological accent, and lexical accent. These accentual formatives, through the application of phonologi cal rules, determine the exact shape of Fo in conjunction with the intrinsic operating characteristics of the speech mechanism. The distinguishing characteristics of each type of accentual formative are illustrated from a wide assortment of languages. A sound system with lexical accentual formatives may be classified by the following three questions: Does it have noncontour features? Does it have 'external' accents (the effect of the accent is realized elsewhere than on the syllable marked by the a ccent)? Is the external accent recursive? The distinction between

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pitch accent and stress accent is rejected as having no phonetic basis. Narrow-band spectrograms
illustrate the level and contour tones of Cantonese, the external accent of Japanese, and the recursive external accent of Acatlan Mixtec. Regardless of the accentual system of
a language, Fo is consistently influenced by intrinsic acoustic or physiological conditions. Sometimes these conditions lead in time to significant differences that participate in the morphophonemic alternations in the language. In Foochow Chinese the intrinsic relation, between Fo and vowel height has developed into morphophonemic vowel alternations. Recent investigations on the interaction between laryngeal and
supralaryngeal activities of the speech mechanism are discussed. A selected bibliography of studies on tone languages is appended.
KEYWORDS: tone typology, vowel height and tone, tonal development, English, Japanese, Cantonese, Yabem, central Africa, New Guinea, pitch accent, Otomanguean, Sinitic, Foochow, Ngbaka, Mixtec, instrumental study of tone, physiology, acoustics, China, Central America, stress, far east, Mixtecan

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9514

Wang, William and Chin-chuan Cheng (1970) "Implementation of Phonological change: the Shuang-feng Chinese Case" Papers from the 6th Regional Meeting, Chicago Linguistic Society. 6, pp. 552-557
ABSTRACT: Evidence on consonantal-tonal development from the Chinese dialect of Shuang-feng is cited in support of lexical diffusion as primary mechanism by means of which phonological change is implemented.
KEYWORDS: China, Sinitic, tonal development, lexical diffusion, phonological change, consonant types and tone, Shuang-feng, nature of sound change

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9515

Wang, William and Kung-pu Li (1967) "Tone 3 in Pekinese" Journal of Speech and Hearing Research. 10.3, pp. 629-636
ABSTRACT: This article reports on a perception experiment designed to find out whether tone 3 in the Peking dialect of Chinese becomes tone 2 when it occurs before another tone 3. There were 130 pairs of test items, the two members of each pair sharing the same phonological features except that one member carries the tone sequence 2-3 while the other member carries the tone sequence 3-3. Each test item was given twice, thus yielding a total of 520 items arranged in random order on a reading list from which the tape recordings were made. Upon hearing an item on the tape, a subject was required to identify from each pair of 2-3 an d 3-3 test items the member he though the heard. The percentage of corre ct responses for 14 subjects falls between 49.2 and 54.2.

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Thus, tone 3 and tone 2 are neutralized before another tone 3.
KEYWORDS: China, Pekinese, tone perception, tone rules, tone sandhi, Mandarin, Sinitic

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9516

Wangler, Hans-heinrich (1963) Zur Tonologie Des Hausa. Akademie-verlag, Berlin. 187 pp.
Reviewed By: Kraft, Charles, Language 40.1 504-507. 1964
NOTES: Schriften zur Phonetik, Sprachwissenschaft und Kommunikationsforschung No. 6.
ABSTRACT: Based on recordings of Lukas (supplemented by the authors recordings of speakers of Sokoto Hausa), a phonetic notation and analysis is offered of tone patterns on words up t ofour syllables and on sentences. An important observation is that high-low-high words are frequently realised as high-low-low
KEYWORDS: downdrift, Hausa, intonation and tone, Chadic, West Africa

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9517

Wangler, Hans-heinrich (1963) "Uber Bezeihungen Zwischen Gesprochenen Und Gesungenen Tonhohen in Afhen Tonsprachen" Jahrbuch Fur Musikalische Volks- Und Volkerkunde, Berlin. 1, pp. 136-145
KEYWORDS: music and tone, Hausa, Chadic, West Africa

9518

Ward, Ida (1933) The Phonetic and Tonal Structure of Efik. Cambridge University Press. 106 pp.
KEYWORDS: Ffik-Ibibio, West Africa, Cross River, Benue-Congo

9519

Ward, Ida (1938) "The Phonetic Structure of Bamum" Bulletin of the School of Oriental and African Studies, London. 9.2, pp. 423-438
KEYWORDS: West Africa, Bamum, Bantoid, Benue-Congo

9520

Ward, Ida (1948) "Verbal Tone Patterns in West African Languages" Bulletin of the School of Oriental and African Studies, London. 12.3-4, pp. 831-837

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KEYWORDS: West Africa, morphotonology, Yoruba, Efik-Ibibio, Igbo, Ewe, Kwa, Cross River, Akan

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9521

Warotamasikkhadit, Udom (1967) "Some Phonological Rules in Thai" Journal of the American Oriental Society. 87.4, pp. 541-574
ABSTRACT: This paper contains a brief description of the phonological component of
Thai set within the theoretical framework of generative phonology. It utilizes Jakobson's set of binary distinctive features, Chomsky and Halle's principle of cyclic rule appli cation, and blanks in the underlying lexical representations. A wide assortment of rules are illustrated: syllable- boundary insertion rules, sequence structure rules, blank-filling (redun dancy) rules, stress assignment rules, tone neutralization rules, and rules to handle 'modified' tones. Warotamasikkhadit's analysis posits [high], [low], and [fall] as distinctive features for tone, an underlying glottal stop in both syllable-initial and syllable-final position, 6 underlying diphthongs (3 short and 3 long), and interprets phonetically long vowels not as geminate sequences, but as
single segments specified [+long] . It further assumes a distinctive feature [prominence] which may assume one of three values - 0, 1, and 2 depending on syllable structure and position and morphosyntactic information.
KEYWORDS: Southeast Asia, Tai, Siamese, stress, tone rules tone features, redundancy rules, vowel length and tone, cyclic rules

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9522

Webb, Nancy (1971) A Statement of Some Phonological Correspondences Among the Pomo Languages. IJAL, Department of Anthropology, University of Indiana, Bloomington. 55 pp.
ABSTRACT: Gives phonological sketches of southeastern, northern and central Pomo languages which include tonal accent ("a combination of higher tone and stronger stress") and extensive correspondences among seven Pomo languages. The development of tonal accent, however, is not discussed.
KEYWORDS: pitch accent, stress and tone, Pomo, North America Hokan

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9523

Weingartner, F. (1970) Tones in Taiwanese, an Instrumental Investigation. National Taiwan University, College of Arts, Taipei. 908 pp.
Reviewed By: Cheng, Teresa Lingua 30. 2-3: 285-294. 1972.

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NOTES: Monograph No. 2
ABSTRACT: An instrumental investigation of Taiwanese tones in isolation and in context. Deals principally with the issue of phonetic accuracy in tonal description.
KEYWORDS: China, Taiwanese, transcription, instrumental stuly of tone, level tones, contour tones, acoustics, Sinitic

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9524

Welmers, William (1959) "Tonemics, Morphotonemics, and Tonal Morphemes" General Linguistics. 4.1, pp. 1-9
NOTES: See Stewart 1965 "The Typology of the Twi Tone System".
ABSTRACT: Welmers outlines some of the types of tonal contrast, and stressses the importance and variety of their functions in selected languages of the world. In particular, the tone system typology proposed by Pike in 'tone languages is amplified by a distinction between terraced-level and discrete-level among languages which Pike discussed as 'register' systems. Terraced-level languages are those with downstep while discrete-level languages may or may not have downdrifting. Welmers solution to the problem of analyzing downstep is a 'drop' toneme which is lower than a preceding high and results in the terracing effect.
KEYWORDS: Southeast Asia, West Africa, downdrift, tone typology, domain of tone, contour tones, morphotonology, floating tones, downstep

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9525

Welmers, William (1962) "The Phonology of Kpelle" Journal of African Languages. 1.1, pp. 69-93
ABSTRACT: This is the first systematic description of Kpelle phonology. The description is based primarily on south-western dialects. The author reduces and simplifies the phonemic inventory by claiming that b, d, g, gb, v, z, are allophones of p, t, k, kp, f, s. These are voiced when they occur after a low tone in initial position of a morphome or after a high tone of a preceding nasal. The claim is that tones cause voicing on consonants. The author also illustrates the kind of morphotonemic alternations found in Kpelle.
KEYWORDS: consonant types and tone, level tones, morphotonology, elicitation of tone, transcription, Kpelle, Mande, West Africa

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9526

Welmers, William (1963) "Associative a and Ka in Niger-Congo"

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Language. 39.3, pp. 432-447
ABSTRACT: The purpose of this article is to point out some reflexes of the Bantu associative a and ka in some widely divergent non-Bantu languages of West Africa. In some Bantu languages the associative morpheme has also disappeared, but the tone of an associative morpheme is retained. The segments were lost,
leaving behind the tone of the morpheme. The evidence given by the author suggests that the associative morphemes
with the most widely attested uses were part of the parent Niger-Congo
language.
KEYWORDS: floating tones, morphotonology, Kwa, Mande, Jukunoid, Narrow Bantu, Kpelle, Loma, Mende, Mandekan, Akan Yoruba, Igbo, Jukun, Benue-Congo

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9527

Welmers, William (1970) "Igbo Tonology" Studies in African Linguistics. 1.3, pp. 255-278
ABSTRACT: Welmers describes Igbo as a terraced-level tone languages. Its tonal system may be described in terms of two tonemes, high and low, plus a phonemic "downstep". He further claims that there is no direct evidence for all cases of downstep coming from deleted low tones. The article illustrates the complex morphotonemic alternations found in Igbo.
KEYWORDS: downstep, level tones, morphotonology, syntactic structure and tone, toneless morphemes, Igbo, Kwa, Lower Niger West Africa

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9528

Welmers, William (1972) "A Further Note on the Typology of Tonal Structures"
ABSTRACT: In his article "The Typology of the Twi Tone System", J. M. Stewart claims to have reduced the tonal structure of Twi, and by implication all of
Welmer's "terraced level" systems, to a mere subtype of Pike's "register" languages. Welmers points out that Stewart's analysis is simply another way of describing "terraced level" languages. The fact remains that the tonal structures of "terraced level" languages are significantly different from those of "discrete level" languages (Pike's "register" languages).
KEYWORDS: tone typology, Akan, West Africa, Kwa, Volta-Comoe

9529

Wescott, Roger (1973) "Tonal Icons in Bini" Studies in African

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Linguistics. 4.2, pp. 197-205
NOTES: Paper presented at the 4th Annual African Linguistics Conference New York, 1973.
ABSTRACT: Wescott claims that there is nonarbitrary (iconic) relationship between the tone patterns of words and their meanings in Bini, especially in adverbs(ideophones) and nouns. Such semantic oppositions as 'tall-short' 'thin-thick' 'tight-loose' 'bright-dull' 'open-closed' are paired with high-low tonal oppositions and adverbs with non-uniform tones denoting irregular shape or motion.
KEYWORDS: Bini, Edo, Kwa, West Africa, tonal iconism

9530

Westphal, E. O. J. (1948) "Linguistics and African Music Research"
ABSTRACT: Notes on the relationship of linguistic tone, stress and music in Bantu languages of Rhodesia (Zimbabive) and Zambia.
KEYWORDS: music and tone, Southern Africa, Benue-Congo, Narrow Bantu, stress and tone, whistle speech

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9531

Westphal, E. O. J. (1962) "Venda: Tonal Structure and Intonation" African Studies. 21, pp. 49-69
NOTES: Continued in African Studies 21: 123-173.
KEYWORDS: intonation and tone, Venda, Narrow Bantu, Benue-Congo, Southern Africa, neutral tone, downstep, morphotonology, polar tone, tone rules

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9532

Williamson, Kay (1959) "The Units of an African Tone Language" Phonetica. 3.2-3, pp. 145-166
ABSTRACT: It is suggested that the usual way of discussing modifications of tone caused by combinations of morphemes is inadequate. In Ijo a tonal analysis in terms of syllable, morpheme, and sentence is abandoned in favor of one in terms of units named 'utterance', 'section', and 'level'. The section is of particular interest, since it is the unit, definable in grammatical terms, within which tones influence one another. Tone classes are then based not on the tones of isolated morphemes, but on the patterns taken by the sections in which the various morphemes occur.
KEYWORDS: Ijo, West Africa, domain of tone, Kwa, tone rules, morphotonology

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9533

Williamson, Kay (1965) A Grammar of the Kolokuma Dialect of Ijo. Cambridge University Press. 127 pp.
Reviewed By: Schachter, Paul. Language, 42: 831-838. 1966
ABSTRACT: In the chapter on phonology, Williamson discusses tone in terms of two tonemes (high and low). Tone units (morphemes) must be assigned to one of
five morphophonemic tone classes on the basis of the effect they have on following units in a tone group.
Units with the same tones in isolation may belong to different classes,
conversely units in the same class may not all have the same tones in isolation. Of the syntactic transformations, several involve tone changes. The grammar concludes with a chapter on the morphophonemics of tone and elision and gives rules for
the combination of units into tone groups and their combination in longer tone phrases. Rules for intonational modification of tone, and vowel and tone elision are also formulated.
KEYWORDS: tone rules, syntactic structure and tone, morphotonology, Ijo, West Africa, Kwa

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9534

Williamson, Kay (1968) "Deep and Surface Structure in Tone Languages" Journal of West African Languages. 5.2, pp. 77-82
KEYWORDS: West Africa, Ijo, Kwa

9535

Williamson, Kay (1970) "Some Alternative Proposals for the Igbo Completive Phrase" Research Notes, University of Ibadan. 3.2-3 pp. 83-90
NOTES: Paper presented at a Round Table Meeting on Elision and Assimilation in West African languages, University of Ibadan, May 1971.
ABSTRACT: Williamson suggests that the completive (associative) phrase in Igbo contains a floating low tone morpheme rather than the high proposed by Voorhoeve, Meeussen and de Blois 1969. Surface tones are then the result of a metathesis rule and a rule that raises a low tone in a series of lows as well as straight forward downdrift, assimilation, and simplification rules.
KEYWORDS: Igbo, Kwa, Lower Niger, West Africa, tone rules, floating tones, downstep, downdrift, metathesis

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9536

Williamson, Kay (1972) "Assimilation in Ogbia" Research Notes, University of Ibadan. 5.2-3, pp. 1-5
ABSTRACT: A brief presentation of vowel and tone contractions

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which occur in nouns
and verb and noun constructions in Ogbia. Final falling tones in nouns derive from high-low, which may arise from final high tone on the noun followed by the low tone definite suffix, a floating high tone following a final consonant with definite suffix, or floating low tone after a high final closed syllable. High-low in verb and noun however yields a high tone, not falling.
KEYWORDS: , Ogbia, Cross River, Benue-Congo, West Africa, tone rules, floating tones, syntactic structure and tone

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9537
Williamson, Kay (1972) "Summary of Tonal Behavior" Research Notes, University of Ibadan. 5-2-3, pp. 3-101
NOTES: Presented at a Round Table Meeting on Assimilation and Elision in West African Languages at the University of Ibadan, May 14-17,1971.
ABSTRACT: Tabulates the results of adjacent vowels in verb + noun and/or noun + noun constructions in Eggon, Jukun, Ghotuo, Urhobo, Idoma, Yala, (of Ogoja) Owon Afa and Yoruba, as far as tones are concerned. In general the result may be a combination, or a simplification in which one tone dominates the other. Since high frequently dominates both mid and low. A
heirarchical ordering of features is suggested. Rules are discussed which combine, assimilate and
then simplify the tones on adjacent vowels.
KEYWORDS: tone rules, assimilation, simplification, West Africa, Kwa, Benue-Congo

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9538
Wilson, W. A. A. (1968) "An Interpretation of the Temne Tone System" Journal of West African Languages. 5.1, pp. 5-12
ABSTRACT: This paper gives much data illustrating (what could be called) morphotonemic alternations in nouns, pronouns, verbs, tense paradigms, relative clauses, non-verbal predicators, and interrogative and disjunctive clauses.
KEYWORDS: morphotonology, syntactic structure and tone, downstep, Temne, West Atlantic, West Africa

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9539
Shearer, William (1963) Illustrated Speech Anatomy. Charles C. Thomas, Springfield,Illinois. 85 pp.
ABSTRACT: Structure of the larynx and mechanics of phonation covered in chapter 3,
pp. 38-53.
KEYWORDS: larynx, pitch control, physiology

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Wilson, W. A. A. (1970) "External Tonal Sandhi in Dagbani" African Language Studies. 11, pp. 405-416
ABSTRACT: Dagbani has a two-level tone system with key lowering (downdrift and downstep). Rules are given to derive surface tone sequences from basic tone patterns of words found in utterance initial position. The solution proposed involves positing latent low tones on zero segments, some of which can be justified by occurrence in vocative forms. Words with these vocative forms raise only the first low tone in a following low tone word. Other high tone words raise two following low tones. Adding an extra low tone to underlying forms allows these processes to be treated together. The formalization of the rules uses [high] and, for surface falls, [fall].
KEYWORDS: tone sandhi, tone rules, floating tones, morphotonology, tone features, Voltaic, Dagbani, West Africa

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9540

Winston, F. D. D. (1960) "The 'Mid Tone' in Efik" African Language Studies. 1, pp. 185-192
ABSTRACT: Winston notes that 'mid' tones in Efik occur only after a high tone and are phonetically similar to high tones which have a conditioned lowering following a low tone. In order to avoid the problem of either assigning one underlying form to different tones or the same tone description to phonetically dissimilar sequences, Winston formulates a solution which drops the concept of mid tone . High and low tones contrast in one system and in the context HH a system of presence or absence of 'downstep' operates. This proposal is compatible with the conditioned lowering of high tones following low tones, named 'automatic downdrift', which has a similar overall phonetic lowering effect. The paper concludes with discussion of the contrastive function and distribution of 'downstep'.
KEYWORDS: Efik-Ibibio, Cross River, Benue-Congo, West Africa downstep, downdrift

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9541

Wong, Helen, (1953) "Outline of the Mandarin Phonemic System" Word. 90.3, pp. 269-276
ABSTRACT: An attempt to analyze the phonemes and tones of spoken Mandarin Chinese in terms of a Jakobsonian set of distinctive features. Four tones (plus a neutral tone) are posited. They are said to display the following oppositions in terms of distinctive features: level vs glide rising vs falling, high vs non-high, long vs short, and unidirectional vs bidirectional. The four

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tones are illustrated with narrowband spectrograms. In footnote 17 on pp. 274-275 Wong discusses the question of the phonological representation of tone.
KEYWORDS: China, Sinitic, Mandarin, stress, neutral tone, tone features, domain of tone, instrumental study of tone

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9542
Woo, Nancy (1969) "Prosody and Phonology" Massachusetts Institute of Technology, Cambridge.
NOTES: Unpublished Prof. dissertation.
ABSTRACT: Woo's dissertation includes a number of interesting proposals for the phonological description of tone languages - 1. Distinctive features of tone are features of pitch height 2. Contour tones are represented as sequences of pitch height features 3. Each pitch height feature is uniquely associated with some sonorant segment 4. All long vowels are represented as geminate vowel clusters 5. Stress is independent of pitch. Woo proposes four prosodic distinctive features [high tone], [low tone],[modify], and[stress]; [long] is excluded:
discussion pp. 118-119, acoustic evidence from Mandarin Chinese pp. 26-35. A critical evaluation of Wang's proposal for phonological features of tone
is also given pp. 30, 35-38, 63-64. Also included is a set of marking conventions and conditions for tone features pp. 81-93. The features [high tone][low tone] are 'primary features', the feature[modify] a 'secondary feature', a consequence being that languages with more than 3
contrastive pitch heights are highly marked. The features[high tone]
and[low tone] represent particular positions of the glottis - heightened glottis and lowered glottis, respectively. The neutral position, or mid position, is designated by the feature specification[- high tone, - low tone]. The feature[modify] cannot be used to specify a tone that is articulated with the glottis in
neutral position. A consequence of 3 above is that short vowels may only carry level tones, long vowels and other sonorant clusters may carry either level or contour tones. In support of 5 Woo cites evidence from Mandarin
Chinese pp. 7-15, Bambara pp. 16-18, and Serbo-Croatian pp. 18-21. In support of 1 - 5 evidence is cited from Northern Tepehaun pp. 46-64, Mandarin Chinese pp. 72-81, Amoy Chinese pp. 94-103, Chaochow Chinese pp. 103-109 and Lungtu Chinese pp. 109-111. For the Chinese dialects Woo finds that the tone sandhi phenomena are conditioned by the following factors: stress, position of syllable in a phonological phrase, and presence of a particular tonal contour on the syllable immediately following the one under consideration: sandhi is never conditioned by some feature of the initial consonant of the following syllable. As for pitch contours sometimes perceived on short vowels, Woo

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suggests that they result from the stress and intonation mechanisms interacting with the pitch production mechanism, the transition from a particular type of consonant to the vowel, or the transition from the vowel to a particular type of consonant. Another source of pitch contours on short vowels may result from eliciting tones on single syllables in isolation. Woo claims that no language contrasts contour tones on syllables with short vowels. Finally, Woo evaluates previous definitions of a 'tone language' and proposes a new language typology for tone.
KEYWORDS: -, tone typology, tone features, contour tones, physiology, stress and tone, tone sandhi, tone rules, Sinitic Amoy, Chaozhou, markedness conventions, Mandarin, Serbo-Croatian, Japanese

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9543
Woo, Nancy (1970) "Tone in Northern Tepehuan" IJAL. 36.1, pp. 18-30
ABSTRACT: Woo's hypothesis that tone is segmental and that contour tones are derived from underlying sequences of level tones is supported by data from Northern Tepehuan, a Piman language spoken in Mexico. Only level tones are found on short vowels; the rising or falling tones that are found in vowel clusters depend on the syllabicity of the members of the cluster and the position of the cluster in the form. Woo considers 3 solutions to the problem of tonal behavior in N. Tepehuan. Solution 1 posits 6 phonemic tones (2 short and 4 long) high, low, high long, low long, rising, falling. Solutions 2 and 3 posit no phonemic tones but predict tones by rule. Solution 2 utilizes absolute neutralization, solution 3 the feature[syllabic]. Woo argues for solution 3. According to Woo's theory, the fact that no rising or falling contours are found on syllables containing a single sonorant segment follows from the fact that there is no second sonorant segment to carry the second pitch specification.
KEYWORDS: North America, Piman, Uto-Aztecan, segmental tone contour tones, tone features, absolute neutralization, pitch accent, Tepehua

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9544
Wurm, Stefan (1954) "Tonal Languages in New Guinea and Adjacent Islands" Anthropos. 49, pp. 697-702
ABSTRACT: Wurm establishes three categories (real tonal, semi-tonal, non-tonal) and allocates languages to these categories on the basis of knowledge at the time of writing.
KEYWORDS: tone typology, New Guinea, Austronesian

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9545
Wurm, Victor (1947) "Words Distinguished by Tone in Duala" Journal of the American Oriental Society. 67.2, pp. 136-138
ABSTRACT: Contains an extensive list of series of words in Duala that are differentiated by tone.
KEYWORDS: level tones, contour tones, Duala, West Africa, Narrow Bantu, Benue-Congo

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9546
Yegerlehner, John (1959) "Arizona Tewa I: Phonemes" IJAL. 25.1 pp. 1-7
ABSTRACT: Vowel and nasals are described as tone-bearing units in the tewa dialect spoken in the Hopi mesas in Arizona (U.S.A.). Descriptions of the way in which pitch contours are assigned to high and low tones and the influence of two unexplained subregisters which raise and lower subsequent tones are given.
KEYWORDS: downstep, tewa, Tanoan, North America

9547
Yen, Sian (1970) "A Note on the Theoretical Framework for Tonal Analysis" IJAL. 36.4, pp. 290-296
NOTES: A reply to William S-Y Wang's "Phonological Features of Tone" IJAL 1967 33. pp. 93-105
ABSTRACT: This paper scrutinizes two specific points in Wang's framework: a tone can have plus specification for both [rising] and [falling] and a contour (i.e. non-level) tone always has Minus specification for the features [central] and [mid]
KEYWORDS: tone features, level tones, contour tones, China, Sinitic, Chaozhou, tone sandhi, tone rules

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9548,
Yung-Sui, Li, Ch'en K'o-chung, and Ch'en Ch'i-kuang (1972) "Some Problems Concerning Initials and Tones in the Miao Language" Miao and Yao Linguistic Studies. Herbert C. Purnell, Jr. (ed.) Southeast Asia Program, Cornell University, Ithaca, New York. pp. 83-110
NOTES: Contains selected articles in Chinese translated into English by Chang Yu-Hung and Chu Kwo-Ray. Data Paper No. 88, Linguistic Series VII.
KEYWORDS: consonant types and tone, tone correspondences, tonal development, Miao, Miao-Yao, China

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9549

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Zemlin, Willard (1968) Speech and Hearing Science - Anatomy and Physiology. Prentice-Hall, Englewood Cliffs, New Jersey. 589 pp.
ABSTRACT: Structure of the larynx and mechanics of phonation covered in chapters 3
and 4, pp. 110-223.
KEYWORDS: , larynx, pitch control, physiology

9550

Zenker, Wolfgang and Adolf Zenker (1960) "Uber Die Regelung Der Stimmlippenspannung Durch Von Aussen Eingreifende Mechanismen" Folia Phoniatrica. 12.1, pp. 1-36
ABSTRACT: Using electromyographic, radiographic and anatomical methods, a close study was made of factors controlling the length, and consequently the tension of the vocal cords, primarily according to differences in pitch but also in various non-speech actions. Muscle activity was Minimal when the larynx was in static rest. Any disturbance leads to increased tension of particular groups of muscles in the system, whether caused by respiration, change of posture or position of the jaw and tongue. The position closest to the static rest postion is that for the mean pitch of the voice in speech. Any lowering of pitch means shortening of the vocal cords, which involves increased activity of all the muscles in
the tensor system, especially the shortening elements. Conversely, when
the pitch is raised, lengthening forces predominate but an increase in acitivity of the shortening elements also occurs. In lengthening the vocal cords the cricothyroid muscle and the elastic ligamentum conicum are important, as also is the thryo-pharyngeal muscle, which approximates the plates of the thyroid cartilage, thus displacing the anterior origin
of the vocal cords forwards. The importance of the cricopharyngeal muscle in shortening the vocal cords was demonstrated and its function closely investigated. Also, under some conditions, the tracheal pull can
exercise a force tending to shorten the vocal cords. Finally it was shown that the length of the vocal cords is also regulated in part by connected chains relating larynx, hyoid, tongue and mandible positions. The theory that tilting back the thyroid by means of the sternothyroid muscle raises pitch is considered improbable, as also is any theory claiming that the cricoid cartilage is anchored to the spine by the cricopharyngeal muscle while the thyroid can be moved forward or tilted back by the action,
of various extrinsic laryngeal muscles.
KEYWORDS: larynx, physiology, pitch control, electromyography, radiography, intonation

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9551

Zima, Petr (1966) "On the Function of Tones in African Languages" Travaux Linguistiques De Prague. 2, pp. 151-156
NOTES: A collection of papers titled "Les Problemes du Centre et de la Peripherie du Systeme de la Langue".
ABSTRACT: Suggests that in languages where tonally Minimal pairs are rarely found,
the distinctive function of tone is largely the result of accidental homophony of morphemes which belong to different classes marked by different tone levels. Zima discusses the implications of experiments with prosodic features separated from segmental features (as in drum languages) and with segments separated from tone (as in many orthographies) as diagnostic te sts of the function of tone. He discusses a typology of tone function in which tone may be seen as central to the system of a given language a tone level (morphological, syntactic, etc) but peripheral at other levels.
KEYWORDS: tone typology, function of tone, West Africa

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ABSOLUTE NEUTRALIZATION
9158 9543 9282
ACCENT
9186 9197 9140
ACOMA
9216 9363 9364
ACOUSTICS
9002 9037 9129 9135 9137 9138 9157 9197 9212 9219 9255 9287 9366
9376 9476 9523 9375 9408 9210 9513 9171 9196 9242 9278 9286 9039
9076 9125
ADAMAWA-EASTERN
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ADANGME
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AFAQINA
9343 9373
AGARABI
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AKAN
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AKHA
9295 9296 9049 9095
ALGONQUIAN
9132 9419 9502 9092
ALUR
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AMAHUACA
9415 9416
AMO
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AMOY
9512 9542 9076
ANDEAN
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ANDEAN-EQUATORIAL
9006 9007 9109
ANGAS
9432
AOMA
9118
APACHEAN
9036 9204 9225 9273
APPLICATION OF PHONOLOGICAL RULES
9072 9081 9197 9216 9338 9461 9462 9473 9326 9342 9356 9217 9073
9080 9115 9116
ARAPAHO
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ARAUCANIAN
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ARCHAIC CHINESE
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ASSIMILATION
9537
ATHAPASKAN
9036 9044 9156 9204 9205 9218 9424 9225 9273 9080
ATLANTIC CREOLE
9034 9227 9503 9504 9505 9277
ATSI
9049
AUCHI
9118
AUSTRONESIAN
9184 9544 9053 9106
AUYUNA
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AVHIANWU
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AWA
9343 9317
BAKWIRI
9208 9209
BALTIC
9408 9372 9162 9163 9187 9270 9091 9114
BAMILEKE
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BAMUM
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BANDI
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BANGUBANGU
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BANNOCK
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BANTOID
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9104 9105 9110
BARIBA
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BASA
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BASSA (KRU)
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BEMBA
9467 9437
BENUE-CONGO
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BINUMARIEN
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BLACK TAI
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BORO
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BODIC
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BOLANCI
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BORROWING
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BOUNDARIES
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BUKAWA
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BURMESE
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CAMA
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CAMBODIAN
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CAMPANAHUA
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CAMUHI
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CANTONESE
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CASHIBO
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CASHINAHUA
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CENTRAL AFRICA
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          9354 9356 9357 9409 9223 9371 9463 9464 9491 9495 9496 9507 9513
          9166 9235 9236 9247 9258 9318 9051 9052 9055 9059 9061 9085
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          9400 9490 9513 9165 9277 9312 9314 9038 9050 9128
CENTRAL POMO
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CHADIC
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          9507 9517 9203 9282 9283 9284 9320
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CHINA
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9142 9143 9144 9146 9147 9148 9149 9168 9176 9180 9183 9184 9185
9191 9193 9194 9200 9212 9213 9215 9221 9265 9271 9272 9287 9288
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9272 9281 9288 9294 9333 9410
9444 9523 9545 9547 9322 9401 9432 9503 9524 9542 9543 9134
9155 9201 9203 9203 9239 9065 9092 9103 9116 9131
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CROW
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9466 9524 9532 9173 9174 9178 9179 9282 9001 9028 9062 9078 9110
9115 9116
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9004 9012 9081 9212 9272 9370 9429 9451 9509 9516 9360 9393 9417
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9203 9252 9268 9275 9276 9317 9321 9011 9086 9096 9116
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GAOXIONG
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HUICHOL
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HUITOTO
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HUNANESE
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IGEDE
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9178 9179 9188 9196 9018 9019 9045 9046 9048 9062
INDO-IRANIAN
9420 9153 9154 9018 9019
INSTRUMENTAL STUDY OF TONE

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9002 9042 9043 9074 9119 9135 9137 9138 9157 9197 9212 9219 9255
9287 9292 9366 9379 9451 9487 9523 9541 9327 9375 9395 9401 9408
9513 9196 9237 9239 9242 9270 9278 9023 9039 9103

INTENSITY AND PITCH
9193 9264

INTONATION
9067 9123 9135 9186 9233 9287 9445 9550 9269 9278 9039 9109

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9022 9034 9063 9067 9070 9135 9161 9189 9195 9202 9212 9264 9271
9272 9288 9292 9376 9450 9457 9516 9327 9384 9401 9414 9372 9373
9490 9531 9140 9153 9166 9171 9174 9179 9203 9269 9039 9062 9118

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IRIGWE
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JAMAICAN CREOLE
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JINGPHO
9332 9333 9337

JUKUN
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JUKUNOID
9441 9323 9442 9526

KABRE
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KACHIN
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KERES
9216 9363 9364
KHMER
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KHOISAN
9328 9500
!KHUNG
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KICKAPOO
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KIOWA
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KIOWA-APACHE
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KIOWA-TANOAN
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9162 9163 9114
LEVEL TONES
9022 9064 9119 9138 9193 9195 9197 9264 9294 9370 9404 9410 9523
9525 9527 9545 9547 9322 9328 9228 9466 9475 9490 9164 9172 9201
9312 9314 9007 9011 9023 9024 9025 9033 9065 9103
LEXICAL DIFFUSION
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LISU
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9070 9300 9417 9447
LITHUANIAN
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9034 9071 9111 9142 9189 9363 9262 9309 9108
LOKO
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LOLOBI-AKPAFU
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LOLO-BURMESE
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LOMA
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LOWER NIGER
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LUBA
9492 9371 9491 9496 9050 9051 9052
LUE
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LUNG MING
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LUNG-CHOW
9301 9305
LUSHAI
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LYEKHEE
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MAHAS
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MAIDAN
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MANDARA
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MANDARIN
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9541 9209 9542 9253 9069 9073 9103
MANDE

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9087 9176 9281 9525 9214 9230 9231 9454 9455 9526 9134 9155 9234
9283 9284 9023 9024 9025 9107 9108

MANDEKAN
9087 9454 9526 9283 9284

MAPPING CONVENTIONS
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MARKEDNESS CONVENTIONS
9197 9429 9461 9512 9442 9542 9075

MARU
9049

MAYAN
9390 9038 9128

MAZATEC
9088 9385 9391 9165

MAZATECAN
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MBUI
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MENDE
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MENOE
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METATHESIS
9535

MIAO
9064 9361 9402 9222 9480 9548 9309

MIAO-YAO
9064 9102 9183 9185 9297 9511 9361 9402 9222 9480 9484 9548 9309

MIXTEC
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MIXTECAN
9093 9206 9226 9313 9329 9330 9331 9388 9389 9391 9392 9358 9400
9490 9513 9312 9314

MOCHA
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MONGO
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MON-KHMER
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MOPAN
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